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ICONES PLEUROTHALLIDINARUM
XXVII

DRYADELLA
and
ACRONIA section
MACROPHYLLAE-FASCICULATAE

Missouri Botanical Garden v. 103

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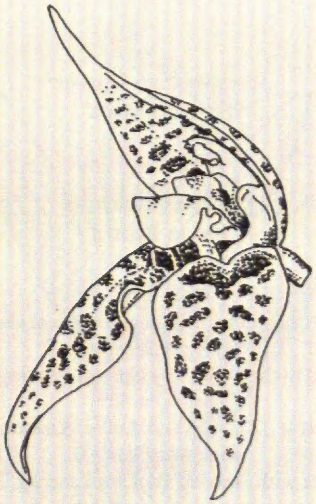
XXVII

DRYADELLA
and
ACRONIA section
MACROPHYLLAE-FASCICULATAE

ADDENDA TO *ACIANTHERA, ANDINIA, DRACULA, DRESSLERELLA, LEPANTHES*, AND *MASDEVALLIA*
NEW TAXA, VALIDATION OF TAXA, ERRATA

Carlyle A. Luer



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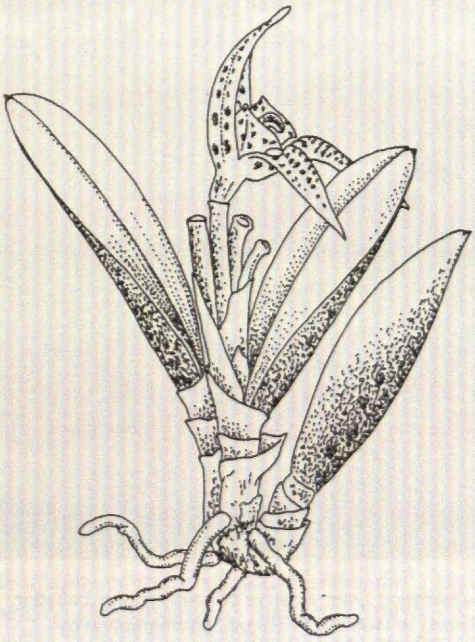


Dryadella barrowii Luer, a native of southeastern Ecuador,
cultivated in Howell, Michigan, photographed by
Lynn O'Shaughnessy 00937, February 2004.

SYSTEMATICS OF *DRYADELLA* (ORCHIDACEAE)

ABSTRACT

A history of *Dryadella* Luer is given and the genus is described. A key to the sections and species is given. Each species is described and illustrated with a black and white drawing. The specimens cited in the distributions are only a few for the more frequent species from various localities.

New species:
Dryadella barrowii Luer
Dryadella clavellata Luer & Hirtz
Dryadella crassicaudata Luer
Dryadella mocoana Luer & R.Escobar
Dryadella nasuta Luer & Hirtz
Dryadella nortonii Luer
Dryadella sublata Luer & J.J.Portilla
Dryadella toscanoi Luer
Dryadella vasquezii Luer
Dryadella wuerstlei Luer

In 1871, Professor Reichenbach described simultaneously in *Pleurothallis* R.Br. the first two species of the future genus *Dryadella*. Both species, *Pleurothallis auriculigera* and *Pleurothallis aviceps*, had been imported at the same time by Sanders in England from a Mr. Bowmann in Brazil. These first two species apparently had not been considered in the later identification of Brazilian species, because of the 25-year-impoundment of Reichenbach's herbarium in Hamburg after his death, and the later 37-year-incarceration of his specimens of *Masdevallia* at AMES. Without surprise, it was discovered that one of the species had acquired later names.

In 1875, Reichenbach described the third, a species from Colombia, as *Masdevallia simula*. In 1881, he transferred his two Brazilian species in *Pleurothallis* to *Masdevallia* where all subsequent new species attributable to *Dryadella* would be added until *Dryadella* was proposed in 1978. Also from Colombia, Reichenbach added *M. meiracyllium* in 1886, and *M. pusiola* in 1887.

In her Monograph of the genus *Masdevallia* in 1896 Florence Woolward was the first to suggest a subgeneric segregation when she placed *Masdevallia obrieniana* and *Masdevallia simula* in Reichenbach's section *Saltatrices*. She also made the apt comment that these species would "perhaps ultimately be excluded from the genus." Schlechter was of the same opinion when he suggested in 1925 a subgenus to be named *Trigonanthe*. In his monograph of 1925, Kränzlin included all the species known at that time in section *Rhombopetalae*, except for *Masdevallia lilliputiana* that he misplaced in his section *Floribundae*. He also included in his section *Rhombopetalae* the *Masdevallia pumila* of Poeppig & Endlicher and Reichenbach's *Masdevallia amethystina* [=*Porroglossum amethystinum* (Rchb.f.) Garay].

In Cogniaux's treatment of *Masdevallia* in Martius's *Flora Brasiliensis* in 1896, the above first two species of Reichenbach were included without localities or citations of specimens. In the addenda published in 1906, Cogniaux added five more

species attributable to the future *Dryadella* (Rolfe's *M. obrieniana* and Barbosa Rodrigues's *M. paulensis* and *M. sessilis* described in the interim, and two new ones, *M. edwallii* and *M. lilliputiana*). Even in Pabst's treatment of his section *Rhombopetala* in *Orchidaceae Brasilienses* in 1975, the two species of Reichenbach were simply listed without further consideration. When Reichenbach's herbarium specimens of *Masdevallia* were finally returned to Vienna in 1982, it was discovered that the frequent *Masdevallia aviceps* had been redescribed as *M. bradei, M. obrieniana, M. paulensis* and *M. sessilis*, but the tiny *M. auriculigera* remains rare.

In the Andes, *Dryadella simula* is the most familiar, frequent, and widely distributed species. Consequently, almost all collections from the Andes and Central America, as well as many from Brazil, have been identified with it. In Brazil, *D. aviceps* is probably the most widely distributed and frequent of the species.

In spite of 37 subsequent additions to the genus since 1978, *Dryadella* contains only 48 acceptable species, several epithets having been reduced to synonymy. The species are distributed in moist or seasonally moist forests of the Neotropics from Mexico to southern Brazil. Nine species are known from Mezoamerica, 30 from the Andes of Venezuela, Colombia, Ecuador, Peru and Bolivia, and 12 from southern Brazil.

Although not closely related to *Masdevallia*, the species were customarily treated there, not only because of the current popularity of the genus *Masdevallia*, but also because of the abbreviated ramicauls each bearing a much longer leaf, and the shallowly cupped flowers often with sepaline tails that superficially resemble a flower of *Masdevallia*. Species of the genus *Dryadella* are easily identified by the hallmarks of the genus: transversely carinate sepals, multi-angled petals, and a long-clawed lip. However, various similarities among the numerous populations of related species make the identification of many specimens difficult.

DRYADELLA

Dryadella Luer, Selbyana 2: 207, 1978.

Type: *Masdevallia elata* Luer, Phytologia 39: 199, 1978.

Ety.: Named for the *dryads*, the nymphs of trees and forests of classical mythology.

Syn.: *Masdevallia* sect. *Saltatrices* Rchb.f. *fide* Woolward, Monogr. *Masdevallia*, 1898, *non* Rchb.f. 1877.

Syn.: *Masdevallia* subgen. *Trigonanthe* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 35: 48, 20 Mar. 1925, *nom. nudum.*

Syn.: *Masdevallia* sect. *Rhombopetalae* Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 34: 188, 15 May 1985.

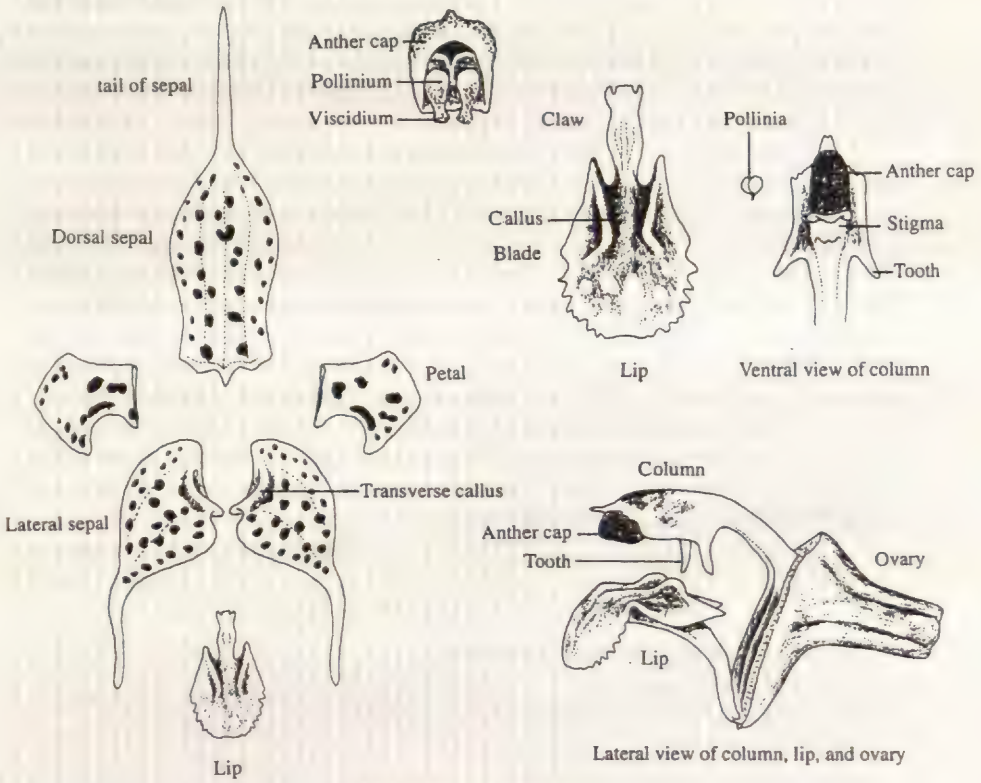
Lectotype: *Masdevallia simula* Rchb.f. (Luer, Monogr. Syst. Bot. 15: 26, 1986)

Ety.: From the Greek *rhombopetalon*, "a rhombus-shaped petal," referring to the petals.

Syn.: *Trigonanthe* (Schltr.) Brieg., Die Orchideen 448, 1975, *nom. invalid.*

Plants perennial, very small to medium in size for the subtribe, epiphytic, rarely lithophytic, densely caespitose or fasciculate, sometimes with an ascending rhizome, the rhizome very short between ramicauls; roots slender to coarse. Ramicauls erect, slender, non-pseudobulbous, usually much shorter than the leaf, unifoliate, partially or completely enclosed by 2 to 3 thin, imbricating sheaths at the base, the inflorescence emerging laterally with an annulus from below the apex (the abscission layer). **Leaf** erect, coriaceous to thickly coriaceous, smooth to lightly verrucose, green or dark green, sometimes suffused or spotted with purple, elliptical to narrowly elliptical, linear to semiterete, the apex acute to obtuse, shallowly notched with a mucro in the sinus, the base narrowly cuneate, or gradually narrowed below, with or without an indistinct petiole. **Inflorescence** a succession of single, resupinate flowers in a few-flow-

ered, usually congested raceme, borne by a usually short peduncle, with a bract near or at the base; floral bracts thin, tubular; pedicels slender, longer or shorter than the floral bract; ovary smooth to verruculose, trialate, trivalvate; **sepals** conspicuous, more or less membranous, usually variously spotted with red, purple or brown, smooth to minutely verrucose, rarely shortly pubescent, more or less subcarinate, 3-veined, more or less ovate, the apices obtuse to acute, often attenuated into a tail which is sometimes clavate, essentially free or connate at the base to form a sepaline cup, the dorsal sepal cucullate, concave, the lateral sepals oblique, acutely deflexed below a transverse callus above the base; **petals** small, inconspicuous, mostly confined within the sepaline cup, more or less fleshy and translucent, more or less marked with red or purple, more or less subquadrate, subsagittate, 4- to 5-angled, or lobulated, often with some marginal thickening on the labellar margin, 2-veined; **lip** spathulate, long-unguiculate, the blade suborbicular or oblong, usually deflexed near the middle, the base of the blade sagittate above the claw, the disc usually with a pair of converging or diverging calli, the claw narrow, nearly as long as the blade, more or less channeled longitudinally, bilobulate at the base, hinged to the apex of the column-foot; **column** broadly winged on the distal half, often with marginal angles or teeth, the apex more or less hooded, sometimes denticulate, the anther and stigma ventral, the rostellum retrorse, the pollinia 2, free, obovoid, more or less slightly flattened, without elongated caudicles, more or less granular at viscidium, the base of the column developed into a thick column-foot with the apex of the ovary and extended a short distance beyond the ovary.



Floral parts of *Dryadella*
Text figure 1.

All species of *Dryadella* are closely allied. So little distinctive variation exists from the "average," that no subgeneric division seems feasible. Vegetatively, the species are basically similar, the densely tufted plants varying in size from minute, less than one centimeter in height, to occasionally ten centimeters in height. The leaves are narrow and thickly coriaceous, sometimes semiterete, fusiform, or ovoid, and are borne by ramicauls usually much shorter than the leaves themselves, or the leaves are sessile. The peduncles, also much shorter than the leaves, are borne laterally from the ramicaul with an annulus below the leaf-stem abscission layer.

The flowers of all known species of *Dryadella* are resupinate. As with most other pleurothallids, resupination does not result from a twisting of the pedicel and ovary, but from a "backward" bending of the pedicel to place the lip lowermost in the flower. The inflorescence is a successively flowered, usually very congested raceme. The apices of the sepals are often acuminate into short or long tails. The dorsal sepal is shallowly connate to the lateral sepals to form a cup that contains the column, petals and lip. The lateral sepals are deflexed above their bases at the opening of the cup where a transverse callus more or less forms a rim across the opening into the cup.

The petals are short, more or less subquadrate with marginal angles or lobules. The angle on the labellar margin commonly overhangs the rim formed by the calli of the lateral sepals. The shape of a petal is often variable within a species. The lip stands more or less erect in the center, and the blade, borne by a well-formed claw, also commonly overhangs the sepaline rim. The column is prominently winged on the distal half, often toothed or with prominent angles. The configuration of the teeth are not constant in a given species, although the long "tooth" found in some species is diagnostic. The anther is ventral and hooded. The minute, granular viscidia of the pair of pollinia protrude above the edge of the rostellar flap that separates the anther from the ventral stigma.

While the petals are variable within any species of *Dyadella*, and the lips are generally similar, all of which are difficult to evaluate within the tiny flowers, the sepals become the most reliable features for identification. The same holds true in *Masdevallia*.

The genus *Dryadella* has never been particularly popular in living collections of hobbyists or professionals, although a few of the miniature plants are usually tolerated as a botanical curiosity with their dense foliage and tiny flowers. The species are disliked by many because of the superficial similarities of the flowers of all the species that are usually hidden among the leaves. Species have been difficult to identify. Many specimens, cultivated or dried and mounted on herbarium sheets, bear erroneous identifications. All the species are not well-defined, there being many variations that render them difficult to identify. It is hoped that the following pages will clarify many of the problems.

BINOMIALS PUBLISHED IN *DRYADELLA*

D. acuminata Luer & Hirtz [= **D. pachyrhiza**]
D. albicans (Luer) Luer ..... Fig. 1.
D. ana-paulae V.P. Castro, B.P. Faria & A.D. Santana ..... Fig. 2.
D. aurea Luer & Hirtz ..... Fig. 3.
D. auriculigera (Rchb.f.) Luer ..... Fig. 4.
D. aviceps (Rchb.f.) Luer ..... Fig. 5a, 5b.
D. barrowii Luer, new species ..... Fig. 6a, 6b.
D. butcheri Luer ..... Fig. 7.
D. clavellata Luer & Hirtz, new species ..... Fig. 8.
D. crassicaudata Luer, new species ..... Fig. 9.
D. crenulata (Pabst) Luer ..... Fig. 10.
D. cristata Luer & R.Escobar ..... Fig. 11.
D. cuspidata Luer & Hirtz ..... Fig. 12.
D. dodsonii Luer ..... Fig. 13.

D. dolichopoda (Luer) Luer [= **D. pusiola**]
D. dressleri Luer ..... Fig. 14.
D. edwallii (Cogn.) Luer ..... Fig. 15.
D. elata (Luer) Luer ..... Fig. 16.
D. espirito-santensis (Pabst) Luer ..... Fig. 17.
D. fuchsii Luer ..... Fig. 18.
D. gnoma (Luer) Luer ..... Fig. 19a, 19b.
D. gomes-ferreirae (Pabst) Luer ..... Fig. 20.
D. greenwoodiana Soto Arenas, Salazar & Solano ..... Fig. 21.
D. guatemalensis (Schltr.) Luer ..... Fig. 22
D. hirtzii Luer ..... Fig. 23.
D. kautskyi (Pabst) Luer ..... Fig. 24.
D. lilliputiana (Cogn.) Luer ..... Fig. 25.
D. linearifolia (Ames) Luer ..... Fig. 26.
D. lueriana Carnevali & Romero ..... Fig. 27.
D. marsupiata Luer ..... Fig. 28.
D. meiracyllium (Rchb.f.) Luer ..... Fig. 29a, 29b.
D. melloi (Pabst) Luer [= **D. lilliputiana**]
D. minuscula Luer & R.Escobar ..... Fig. 30.
D. misasii (Luer & R.Escobar) Luer [= **D. gnoma**]
D. mocoana Luer & R.Escobar, new species ..... Fig. 31.
D. nasuta Luer & Hirtz, new species ..... Fig. 32.
D. nortonii Luer, new species ..... Fig. 33.
D. obrieniana (Rolfe) Luer [= **D. aviceps**]
D. odontostele Luer ..... Fig. 34.
D. osmariniana (Braga) Garay & Dunst. probably [= *D. guatemalensis*]
D. pachyrhiza Luer & Hirtz ..... Fig. 35.
D. paranaensis (Schltr.) Luer [= **D. lilliputiana**]
D. perpusilla (Kraenzl.) Luer, cf. page 41, excluded from *Dryadella*.
D. popayanensis (F.Lehm. & Kraenzl.) Luer = **D. simula**
D. pusiola (Rchb.f.) Luer ..... Fig. 36.
D. rodrigoi Luer ..... Fig. 37.
D. silvana F.Barros [= **D. aviceps**]
D. simula (Rchb.f.) Luer ..... Fig. 38a, 38b.
D. simulatrix (Kraenzl.) Luer [= **D. pusiola**]
D. sororcula Luer ..... Fig. 39.
D. sublata Luer & J.J.Portilla, new species ..... Fig. 40.
D. summersii (L.O.Williams) Luer ..... Fig. 41.
D. susanae (Pabst) Luer ..... Fig. 42.
D. toscanoi Luer, new species ..... Fig. 43.
D. vasquezii Luer, new species ..... Fig. 44.
D. verrucosa Luer & R.Escobar ..... Fig. 45.
D. vitorinoi Luer ..... Fig. 46.
D. werneri Luer ..... Fig. 47.
D. wuerstlei Luer, new species ..... Fig. 48.
D. zebrina (Porsch) Luer ..... Fig. 49.

KEY TO THE SPECIES OF *DRYADELLA*

1 Mature leaf narrowly linear, less than 3 mm wide....2
1' Mature leaf not less than 3 mm wide....13

"The Needle Leaves"

(Leaves that are more than 3 mm wide often appear much narrower when dried)

2 Rhizome repent with leaves erect....*D. dodsonii*
2' Plant more or less caespitose....3

3 Mature leaf more than 4 cm long....4
3' Mature leaf less than 3.5 cm long....6

4 Sepals obtuse, acuminate, without tail....*D. guatemalensis*
4' Sepals caudate....5

5 Flowers spotted; petals microscopically papillose at the base....*D. meiracyllium*
5' Flowers white; petals not papillose at the base....*D. albicans*

6 Dorsal sepal wider than the lateral sepals combined....*D. pusiola*
6' Dorsal sepal not wider than the laterals combined....7

7 Sepals with slender tails....8
7' Sepals with thick tails....11

8 Sepals with tails longer than the blade....*D. wuerstlei*
8' Sepals with tails not longer than the blade....9

9 Lip with blade irregularly digitate....*D. linearifolia*
9' Lip with blade not irregularly digitate....10

10 Petals microscopically papillose at the base....*D. meiracyllium*
10' Petals not papillose at the base....*D. pachyrhiza*

11 Petals obliquely acute....*D. rodriogi*
11' Petals obtusely lobulate....12

12 Column with a pair of long, descending teeth....*D. odontostele*
12' Column broadly winged with acute angles....*D. kautskyi*

13 Mature leaf less than 25 mm long....14
13' Mature leaf more than 25 mm long....31

"The Tiny Mites"

14 Rhizome repent with suborbicular, overlapping leaves....*D. susanae*
14' Rhizome not repent with suborbicular, overlapping leaves....15

15 Dorsal sepal with apex subacute....16
15' Dorsal sepal with apex caudate....19

16 Dorsal sepal with thick, tail-like apex; lateral sepals triangular....*D. nortonii*
16' Not as above....17

17 Peduncle more than half the length of the leaf....*D. sublata*
17' Peduncle less than half the length of the leaf....18

18 Dorsal sepal dilated and widest at the base.....*D. greenwoodiana*
18' Dorsal sepal widest near the middle.....*D. lueriana*

19 Sepals with tails as long as or longer than the blade.....20
19' Sepals with tails shorter than the blade 21

20 Sepals with thick tails 21
20' Sepals with slender tails 23

21 Sepaline tails terete.....*D. crassicaudata*
21' Lateral sepals with long, clavate tails.....*D. clavellata*

22 Lateral sepals acuminate into tails.....*D. zebrina*
22' Lateral sepals contracted into tails.....*D. lilliputiana*

23 Column with a descending tooth 24
23' Column without a descending tooth.....25

24 Leaf petiolate .....*D. butcheri*
24' Leaf sessile.....*D. werneri*

25 Lip denticulate 26
25' Lip entire 27

26 Lip with blade suborbicular .....*D. auriculigera*
26' Lip with blade oblong.....*D. anapaulae*

27 Dorsal sepal with tail 1 mm long .....*D. sororcula*
27' Dorsal sepal with tail 2-3 mm long 28

28 Petals with sharply acute, marginal angles.....*D. minuscula*
28' Petals with obtuse, marginal angles 29

29 Dorsal sepal with subclavate tail.....*D. vasquezii*
29' Dorsal sepal with slender tail 30

30 Lip with erect, triangular calli .....*D. zebrina*
30' Lip with low, rounded calli .....*D. dressleri*

"All The Rest"

31 Dorsal sepal with apex subacute to obtuse 32
31' Dorsal sepal with apex acuminate to caudate.....38

32 Leaf, sepals, and lip verrucose .....*D. verrucosa*
32' Leaf, sepals, and lip not verrucose 33

33 Ramicaul well-developed, to 4 cm long.....*D. elata*
33' Ramicaul less than 1.5 cm long.....34

34 Petals tall-crested .....*D. cristata*
34' Petals not crested.....35

35 Lip with blade oblong, not decurved .....*D. gnoma*
35' Lip not with an oblong, non-decurved blade.....36

36 Lip with the distal third of the blade recurved against itself.....*D. marsupiata*
36' Lip not with the distal third of the blade recurved against itself.....37

37 Petals obliquely acute .....*D. vitorinoi*
37' Petals obtusely dolabriform .....*D. aurea*

38 Dorsal sepal obtuse, contracted into a tail 1 mm long, 1 mm thick.....*D. nasuta*
38' Dorsal sepal not with tail 1 mm long, 1 mm thick.....39

39 Column with a descending tooth 40
39' Column without a descending tooth.....42

40 Column with an acute tooth; lip with claw compressed.....*D. summersii*
40' Lip with the claw not compressed.....41

41 Lip with smooth lamellae; column with a pair of triangular teeth.....*D. cuspidata*
41' Lip with denticulate lamellae; column with short, truncate tooth.....*D. mocoana*

42 Dorsal sepal acuminate into an acute tip or tail shorter than the blade.....43
42' Dorsal sepal contracted into a tail as long as or longer than the blade.....50

43 Mature leaf usually more than 4 cm long 44
43' Mature leaf less than 4 cm long 48

44 Peduncle and pedicel each 2-3 cm long.....*D. barrowii*
44' Peduncle and pedicel less than 1 cm long 44

45 Sepals minutely caudate; petals pubescent.....*D. espirito-santensis*
45' Sepals not minutely caudate; petals not pubescent.....45

46 Lateral sepals triangular, slightly pusticulate.....*D. hirtzii*
46' Lateral sepals contracted into short tails.....46

47 Petals obliquely truncate at the apex with a lobule on the lower margin.*D. simula*
47' Petals subquadrate with an angle on either margin.....*D. aviceps*

48 Lip with calli of the blade low, rounded.....*D. dressleri*
48' Lip with calli of the blade sharply acute 49

49 Column with broad wings half the length of the column.....*D. fuchsii*
49' Column with short wings about a fourth the length of the column.....
.....*D. gomes-ferreirae*

50 Leaf up to 6 mm wide.....
50' Leaf up to 6-12 mm wide 51
.....53

51 Lateral sepals reflexed; lip fringed.....*D. crenulata*
51' Lateral sepals not reflexed; lip entire 52

52 Lip with the blade ca. 2 mm long and wide.....*D. zebrina*
52' Lip with the blade ca. 3 mm long and wide.....*D. edwallii*

53 Sepals less than 10 mm long.....*D. aviceps*
53' Sepals more than 12 mm long.....*D. toscanoi*

Dryadella albicans (Luer) Luer, Selbyana 2: 207, 1978.

Bas.: *Masdevallia albicans* Luer, Phytologia 39: 185, 1978.

Ety.: From the Latin *albicans*, "becoming white," in reference to the white flowers.

Plant small to medium for the genus, epiphytic, densely caespitose; roots thick. Ramicauls erect, 6-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, narrowly linear to semiterete, acute, 3-6 cm long, 2-3 mm wide, gradually narrowed below to the base. **Inflorescence** a single, long-pedicellate flower, borne by a peduncle 5 mm long, with a bract from low on the ramicaul; floral bract thin, tubular, 7 mm long; pedicel 10 mm long, cellular-glandular; ovary cellular-glandular, 1.5 mm long; **sepals** white, the dorsal sepal broadly ovate, obtuse, concave, 7 mm long, 13 mm long including the tail, 5.5 mm wide, contracted into a pale yellow tail 6 cm long, connate to the lateral sepals for 1.5-2 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, acuminate, 12 mm long including the tail, 3 mm wide, minutely erose, with a transverse callus above the decurved base, connate 1 mm at the base to form a small mentum; **petals** translucent pale green, oblong, obtuse, truncate-trilobulate, 1.5 mm long, 1.25 mm wide, 1-veined; **lip** pale yellow-green, long-unguiculate, the blade elliptical, 1.75 mm long, 1 mm wide, the apex rounded, the base above the claw with a pair of acute, erect lobules, the disc with a pair of erect, rounded lamellae converging from the lobules, the claw 1.25 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, 2 mm long, winged above the middle, the foot 1.5 mm long.

ECUADOR: **Azuay**: western slopes of the Andes, alt. 2000 m, collected by B. Malo in 1972, flowered in cultivation at Tarqui near Cuenca, 16 July 1977, *C. Luer 1715* (holotype of *M. albicans*: SEL).

This species of southern Ecuador is related to the relatively frequent *Dryadella pusiola*, but with much longer leaves and twice larger flowers. The petals are obscurely three-lobed at the truncate apex. The lobules at the base of the blade of the lip are erect, not retrorse on the same plane as the blade as in *D. pusiola*.

Dryadella ana-paulae V.P.Castro, B.P.Faria & A.D.Santana, Richardiana 4(4): 198, 2004.

Ety.: Named for Ana Paula Santana, daughter of one of the collectors of this species.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-5 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, ellipsoid to linear-elliptical, terete, acute to subacute, 7-30 mm long, 3-6 mm wide, 2-3 mm thick, abruptly cuneate at the base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 2-4 mm long; pedicel 2-4 mm long; ovary 0.5-1 mm long, thickly trialate; **sepals** yellow-green, sometimes with red dots, fleshy, the dorsal sepal elliptical, concave, 4.5-6 mm long, 2-2.5 mm wide, the apex contracted into a terete tail 2-2.5 mm long, connate to the lateral sepals for ca. 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, 4.5-5 mm long including the thick, tail-like apex, 1.5 mm wide, slightly contracted above the middle into the ill-defined, thick tail-like apices, connate 0.5 mm at the base, with a low, transverse callus medially above the concave base; **petals** yellow, suboblong-obhastate, 1.5 mm long, 1.25 mm wide, the apex obtuse, with an obtuse angle on both margins above the middle; **lip** yellow, unguiculate, the blade thick, arcuate, suboblong, 1.5 mm long, 0.9 mm wide, minutely erose, the apex round, the base above the claw with a pair of acute angles, the disc with a low pair of minutely denticulate lamellae below the middle, the claw 0.75 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** yellow, 1.5 mm long, longitudinally winged on the distal half, bidentate at the apex, the foot thick, equally long.

BRAZIL: **Dist. Fed.**: Corrégo Taboquinha, á 100 m du Condomínio Itaipu, VII Região Administrativa, Paranoá, date unknown, *V.P. Castro et al. s.n.* (Holotype: UB; Isotype: MO), C. Luer illustr. 20620.
BOLIVIA: **Santa Cruz**: near Caranda, 50 Km northwest of Santa Cruz, cultivated by L. Moreno, 5 Dec. 1978, *C. Luer 3617* (SEL); epiphytic in seasonally dry forest near Buena Vista, alt. 390 m, collected by D. Ric, flowered in cultivation at Montero, 20 Aug. 1991, *C. Luer 15233* (MO); Buena Vista, collected by *R. Vásquez 1127* (Herb. Vasq., MO) C. Luer illustr. 16392.

First cultivated by Dr. Moreno in 1978 in Santa Cruz, Bolivia, *Dryadella ana-paulae* occurs at low altitudes in the seasonally dry forests of central Bolivia and Brazil. It is characterized by the small habit; thickly fleshy, terete leaves; small yellow, fleshy sepals with thickened, tail-like apices; and a small lip with a suboblong, erose blade with erose carinae. The classical transverse calli above the base of the lateral sepals are reduced to a slight thickening on the medial half at the base. It is closely allied to the similar *Dryadella vasquezii* that is most easily distinguished by the entire, suborbicular blade of the lip.

Dryadella aurea Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 159, 1999.

Ety.: From the Latin *aureus*, "golden," referring to the yellow-orange flowers.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2–4 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly linear-obovate, acute, 20-30 mm long, 3-3.5 mm wide, gradually narrowed below to the base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle less than 1 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 2-3 mm long; pedicel 2 mm long; ovary 0.75-1 mm long, trialate; **sepals** clear yellow-orange, the dorsal sepal ovate, concave, 5.5 mm long, 2.5 mm wide, the apex narrowly acute, thickened, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, acuminate, 5 mm long, 1.75 mm wide, connate 0.5 mm at the base, with a transverse callus above the decurved base, the margins more or less cellular; **petals** orange, sagittate, 1.75 mm long, 1.75 mm wide, the apex obtuse, microscopically undulate, with an obtuse angle on the upper margin and an acute angle on the lower margin; **lip** yellow-green, unguiculate, the blade thick, suboblong, 1.5 mm long, 1 mm wide, the apex subtruncate to rounded, the base above the claw with a pair of acute angles, the disc with a pair of rounded lamellae just below the middle, the claw 0.75 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** green, 1.75 mm long, longitudinally erose-winged on the distal half, bidentate at the apex, the foot equally long.

ECUADOR: **Morona-Santiago**: Cordillera del Cutucú, epiphytic in forest along the new road between Mendez and Morona, alt. 950 m, 17 Jan. 1989, *C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13963* (Holotype: MO; Isotype: SEL).
PERU: **Pasco**: Oxapampa, Mirador ridge, Río Paujil, Parqué Nacional Yanachaga Chemillén, alt. 700 m, 20 Oct. 1993, *R. Fernandez 28* (MO, USM).

This little species occurs in lowland southeastern Ecuador in the Cordillera del Cutucú and northeastern Peru. Superficially it resembles most of the other species in the genus, but it is characterized by the small habit; narrowly obovate leaves; small, clear, yellow-orange to orange flowers; acute, acuminate but tailless sepals; and a thick, suboblong blade of the lip with a pair of low, rounded carinae below the middle.

Dryadella auriculigera (Rchb.f.) Luer, Selbyana 2: 208, 1978.

Bas.: *Pleurothallis auriculigera* Rchb.f., Gard. Chron. 1579, 1871, *non P. auriculigera* Hoehne & Schltr., 1926.

Ety.: From the Latin *auriculiger*, "bearing ears," referring to the auriculate petals.

Syn.: *Masdevallia auriculigera* (Rchb.f.) Rchb.f., Otia Bot. Hamburgensia 2:93, 1881.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls slender, erect, 1-2 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, spotted with purple, thickly coriaceous, narrowly elliptical-semiterete, subacute, 8-14 mm long, 2.5-3 mm wide, 2 mm thick, gradually narrowed below to the base. **Inflorescence** a single flower, produced successively, borne by a peduncle 1 mm long, enclosed by a bract, from low on the ramicaul; floral bract thin, 1.5-2 mm long; pedicel 2.5-3 mm long; ovary triquetrous, 1 mm long; **sepals** fleshy, the dorsal sepal oblong, concave, subcarinate, 4.75 mm long including a thick tail-like apex, 2 mm wide expanded, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals broadly ovate, oblique, obtuse, contracted into a tail less than 1 mm long, 1.8 mm wide, with an oblique, transverse callus above the decurved base, connate 0.25 mm at the base; **petals** oblong-subhastate, transversely obtuse, 1.5 mm long, 1.5 mm wide across a descending, obtuse lobule on the lower margin below the apex; **lip** long-unguiculate, the blade obovate, 1.2 mm long, 1 mm wide, decurved near the middle, the apex broadly rounded, erose, the base above the claw with a pair of acute, retrorse lobes, the disc with a small pair of erect, angled lamellae converging from the lobes, the claw 0.75 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** 1.5 mm long, shallowly winged above the middle with an acute angle on the lower edge of the wing, the foot thick, 1 mm long.

BRAZIL: Without locality, imported from Brazil in 1866 by F. Sanders, flowered in cultivation, *Bowmann 1636* (Holotype: W). **Espirito Santo**: near Domingo Martens, collected by Enrico Machado, flowered in cultivation 2 Mar. 1991, *A. Toscano de Brito 828* (MO), C. Luer illustr. 16950.

This species was first exported by Bowmann to Sander in England who referred specimens to Reichenbach. Reichenbach described it in *Pleurothallis* in 1871, but transferred it to *Masdevallia* in 1881 where it remained until 1978. Although its companion *D. aviceps* is common and widely distributed, *D. auriculigera* is rare and seldom seen in cultivation.

Dryadella auriculigera is distinguished by the very small habit; thick, elliptical semiterete leaves that are spotted with purple; a short peduncle; small, yellow flowers dotted with purple or brown; sepals with short tails; irregular petals with a decurved lobule on the lower margin of the apex; and a lip with a round, denticulate-erose, anterior margin.

Although Reichenbach's description could apply to *D. kautskyi*, enhanced by the sketch of the petal with the prominent descending lobule, the watercolor painting present in Reichenbach's herbarium clearly illustrates spotted leaves much broader than the "needle-like" leaves of *D. kautskyi*. The two species are closely allied, *D. kautskyi* being further distinguished by larger flowers with longer tails.

Dryadella aviceps (Rchb.f.) Luer, Selbyana 2: 208, 1978.

Bas.: *Pleurothallis aviceps* Rchb.f., Gard. Chron. 1579, 1871.

Ety.: From the Latin *aviceps*, "a bird head," alluding to the similarity of a flower bud to the head of a bird.

Syn.: *Masdevallia aviceps* (Rchb.f.) Rchb.f., Otia Bot. Hamburgensia 2: 93, 1881.

Syn.: *Masdevallia obrieniana* Rolfe, Gard. Chron. 8: 524, 1890.

Ety.: Named in honor of Mr. James O'Brien of Harrow-on-the-Hill, Middlesex, England.

Syn.: *Masdevallia sessilis* Barb.Rodr., Pl. Nov. Jard. Bot. Rio de Janeiro 6: 17, 1898.

Ety.: From the Latin *sessilis*, "sessile," referring to the very short flowering stems.

Syn.: *Masdevallia paulensis* Barb.Rodr., Contr. Jard. Bot. Rio de Janeiro 2:51, 1901.

Ety.: Named for the state of São Paulo where the species was discovered.

Syn.: *Masdevallia simula* var. *obrieniana* (Rolfe) Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 34: 192, 1925.

Syn.: *Dryadella obrieniana* (Rolfe) Luer, Selbyana 2: 209, 1978.

Syn.: *Dryadella sylvana* F.Barros, Rev. Bras. Bot. 18(1): 135, 1995.

Ety.: From the Latin *sylvanus*, "sylvan," referring to the wooded habitat.

Plant medium to large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 8-15 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, often suffused with purple beneath, elliptical-obovate, subacute, 3-6 cm long, 0.6-1.3 cm wide, narrowly cuneate below to the subpetiolate base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 3-6 mm long; pedicel 4-5 mm long; ovary 1.5-2 mm long, trialate; **sepals** whitish, greenish or yellowish, variously dotted or spotted with purple or brown, the dorsal sepal ovate, concave, 6-9 mm long including the tail, 2.5-4 mm wide expanded, connate to the lateral sepals for 0.5-1 mm to form a sepaline cup, the apex acute, contracted into a thickened tail 2.5-4 mm long, the lateral sepals ovate, oblique, 5-7 mm long including the tail, 2.5-3 mm wide, connate less than 1 mm at the base, with a transverse callus above the decurved base, the apices subacute to obtuse, contracted to a thickened tail 3-4 mm long; **petals** translucent yellowish, variously spotted with purple, sagittate, 2.5-4 mm long, 2-4 mm wide, the apex obtuse, with a subacute or obtuse angle on both sides below the apex; **lip** yellow, suffused or blotched with purple, unguiculate, the blade obovate, 2-3 mm long, 1.5-1.75-3 mm wide, the apex broadly rounded, decurved, the base above the claw with a pair of acute, retrorse angles, the disc with a pair of obtuse lamellae near the middle from each basal angle, the claw 1-2 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, suffused or spotted with purple, slender, 2.5-3 mm long, winged on the distal half, denticulate at the apex, the foot equally long, thick with the apex of the ovary.

BRAZIL: Without locality, imported from Brazil in 1866 by F. Sanders, flowered in cultivation, *Bowmann 1633* (Holotype: W); without locality, imported from Brazil by B. Würstle from Dr. A. de Ghillány, flowered in cultivation in Spielberg, Germany, 22 May 1980, *C. Luer 5266* (SEL); also imported from Ghillány by Würstle, flowered in cultivation, 10 Sept. 1981, *C. Luer 6484* (SEL). **Paraná**: Guaira, Sete Quedas, alt. 200 m, 24 Jan. 1967 *G. Hatschbach 15902* (K, NY, US); Rio Ipoiitã, Itaquaruqu, 18 Jan 1987, *F. Chagas & Silva 1320* (SEL). **Rio de Janeiro**: 1894, *Glaziou 19884* (K); epiphytic near Itaguahy, *B. Rodrigues s.n.* (holotype of *M. sessilis* = B.Rodrigues drawing); Reserva Fl. Washington, Luiz, camino para Itú, 7 Mar. 1934, *A. Gehrt s.n.* (NY); Cabo Frio, flowered in cultivation at the botanical garden, 6 Mar. 1952, collector unknown, (RB). **São Paulo**: Forest at Morro Pedado, *G. Edwall s.n.* (holotype of *M. paulensis* = B. Rodrigues drawing); Campos do Jordão, alt. 1500 m, 13 July 1916, *C. Campos Porto 287* (RB); Morro dos Pedras, Iguape, Feb. 1917, *A.C. Brade 8058* (holotype of *M. bradei*: HB); Boã Vista Hill, 26 Mar. 1951, *Segadas-Vianna 2517* (K); São Sebastião, Praia de Baleia, collected by E. Catharino, 6 Mar. 1995, flowered in cultivation at the São Paulo Botanical Garden, #16602, 16 Jan. 1997, *C. Luer 18145* (MO). **Bahia**: southern part of the state, flowered in cultivation 4 May 1993, *E.F. da Silva s.n.* (holotype of *D. silvana*: SP).

PARAGUAY: **Paraguayi**: epiphytic in forest of Parqué Nacionál Ybycuí, 28 Apr. 1982, *I.M. Vavrek & E. Gonzales 635* (MO); epiphytic in big trees around Salto Cristal, alt. 310 m, 31 May 1986, *C. Luer, J. Luer, N. DeBarath & L. Ramella 12259* (MO).

Without collection data, flowered in cultivation by R.I. Measures, Esq., of Cambridge Lodge, Camberwell, England, June 1895 *Measures s.n.* (holotype of *M. obrieniana*: K).

This species is frequent, and widely distributed through Brazil and Paraguay. It is widely cultivated today, known commonly as *Dryadella obrieniana*. Only after 1982 when Reichenbach's herbarium material could again be examined, could the true identity of this species be assessed. Reichenbach's very adequate drawings and description of his *Pleurothallis aviceps* leave no doubt about the identity of this species. It is also well illustrated and described by Woolward in her 1896 monograph of the genus *Masdevallia* under the name *M. obrieniana*. It had been redescribed by Rolfe as *M. obrieniana* in 1890 the year after Reichenbach's herbarium was sealed in Hamburg according to his will.

Although variations in color and minor variations in morphology occur throughout the distribution, *Dryadella aviceps* is easily recognized by the relatively large habit with thick, green leaves that are broad for the genus, and usually suffused with purple. The flowers are of average size and "standard" for the genus with spotted sepals with short tails, obtuse petals with obtusely angled margins, and an unguiculate lip without characters distinctive from other species.

Dryadella barrowii Luer, sp. nov.

Ety.: Named for Roy Barrow who cultivates this species at Royden Orchids, Great Missinden, UK.

Species haec *D. edwallii* (Cogn.) Luer similis, sed foliorum petiolis proportione longioribus et sepalis majoribus caudis proportione brevioribus differt.

Plant medium to large in size for the genus, epiphytic, densely caespitose; roots thick. Ramicauls erect, 5-15 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly linear-elliptical, subacute, 3-7.5 cm long, 4-6 mm wide, gradually narrowed below into a slender, indistinct petiole 1-2 cm long. **Inflorescence** a loose, long-pedunculate, long-pedicellate, successively few-flowered raceme, borne by a slender, erect peduncle 10-20 mm long, with a bract near the base, from low on the ramicaul; floral bracts thin, 7-10 mm long; pedicel microscopically verruculose, 15-30 mm long; ovary cellular-glandular, 2-3 mm long; **sepals** white to greenish white, often with minute purple dots and bars, the dorsal sepal elliptical, acuminate, concave, 13-17 mm long including a tail or elongated tail-like apex, or a thick tail up to 6 mm long, 6-7 mm wide expanded, connate to the lateral sepals for 1.5-2 mm to form a sepaline cup, the lateral sepals narrowly ovate, oblique, 12-15 mm long, 4-5 mm wide, acuminate above the middle into a short, thick tail-like apex, with a transverse callus above the decurved base, connate 1-2 mm at the base to form a small chin; **petals** translucent greenish white, oblong, with marginal angles, 2.5-3 mm long, 0.75-2.5 mm wide; **lip** greenish white, long-unguiculate, the blade elliptical-ovate, 3-4 mm long, 2.5-3.5 mm wide, the apex rounded, more or less deflexed, the base above the

claw with a pair of acute, suberect lobules, the disc with a pair of erect, minutely denticulate lamellae converging from the lobules, the claw 1.5-1.75 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, spotted with purple, 2.5-3 mm long, longitudinally winged from below the middle, the foot equally long.

ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, obtained from Ecuagenera, cultivated by *R. Barrow 024* (Holotype: MO), C. Luer illustr. 20822. **Pichincha**: west Pichincha, 17 Sept. 1978, collected by A. Hirtz, *C. Luer 3446* (SEL). **Napo**: without details of locality, flowered in cultivation by M. & O. Robledo at La Ceja, Colombia, 15 Nov. 1977, *C. Luer 2022* (SEL); without collection data, flowered in cultivation by P. & A. Jesup in Bristol, CT., 15 Dec. 1988, *C. Luer 13799* (MO). **Azuay**: western slopes of the Andes, alt. 2000 m, collected by B. Malo in 1972, flowered in cultivation at Tarqui, 15 July 1977, *C. Luer 1703* (SEL).

This large-flowered species is uncommon and widely distributed, having been found on both sides of the Andes of Ecuador. It is similar to the Brazilian *D. edwallii*, but differs with larger blades of the sepals with proportionately shorter tails. Both species have elongated peduncles and pedicels. The petals of both species are similarly variable.

Dryadella butcheri Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 160, 1999.

Ety.: Named in honor of the late Henry Butcher of Volcán, Chiriquí, Panama, long known for his keen knowledge of the orchids of Panama, who discovered this species.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 5-7 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, subacute to obtuse, 15-20 mm long, 3 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle 1 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, acuminate, imbricating, 2-3 mm long; pedicel 2 mm long; ovary 0.75 mm long, trialate; **sepals** translucent green, diffusely spotted with purple, the dorsal sepal oblong, concave, subacute, acuminate into a terete tail 2.5 mm long, 6 mm long including the tail, 2 mm wide, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, obtuse, contracted into slender tails 2 mm long, 5.5 mm long including the tail, 2 mm wide, connate 0.5 mm at the base, with a transverse callus above the decurved base, the margins more or less cellular-erose; **petals** translucent, spotted with purple, flabellate-sagittate, 2 mm long, 2.5 mm wide, broadly expanded above the middle with rounded marginal angles to the transverse or broadly truncate apex with a minute, acuminate apiculum, narrowed below the middle to the base with a lobule on the lower margin at the base; **lip** orange-brown, long-unguiculate, the blade subquadrate, the sides and apex reflexed, 1.75 mm long, 1.75 mm wide, the apex broadly rounded, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low, obtuse pair of calli from the claw, the claw 0.75 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, 2 mm long, with a prominent pair of descending, uncinate wings between the middle and distal thirds, bidentate at the apex, the foot equally long.

PANAMA: **Chiriquí**: without locality, collected by H. Butcher, flowered in cultivation by P. & A. Jesup in Bristol, CT., 10 Dec. 1988, *C. Luer 13804A* (Holotype: MO). **Panama**: Cerro Jefe, alt. 1000 m, 22 Sept. 1972, *A. Gentry 6177* (MO); same area, alt. 900 m, 1 Dec. 1983, *C. Luer, J. Luer, H. Butcher & A. Maduro 9188* (SEL); Altos de Pacora road, alt. 650 m, collected 4 Mar. 1976, *C. Luer, J. Luer & R.L. Dressler 1032* (SEL). Without locality, collected by Tineka Mulder, flowered in cultivation at Wageningen, Holland, 4 Sept. 1987, *C. Luer 12923* (MO).

This little species is found relatively frequently in Panama, having been known from collections by Henry Butcher for many years. *Dryadella butcheri* is readily recognized by the very small habit and small, spotted flowers with caudate sepals, flabellate petals, and an uncinate-winged column. The columnar processes are similar to those of the much larger *D. cuspidata* of lowland, eastern Ecuador.

Dryadella clavellata Luer & Hirtz, sp. nov.

Ety.: From the Latin *clavellatus*, "clubbed," referring to the sepaline tails.

Inter species generis *Dryadellae* planta perparva, foliis crassissimis, floribus perparvis, sepalorum lateralium longicaudatis clavellatis, petalis subhastatis, columnae alis incisis.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 1.5-2 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, ellipsoid, subacute to obtuse, 8-

13 mm long, 4 mm wide, 2 mm thick, cuneate below into the sessile base. **Inflorescence** a congested, successively few-flowered raceme up to 8 mm long, borne by a peduncle 1-2 mm long, enclosed by a loose sheath, from low on the ramicaul; floral bracts thin, imbricating, 3-4 mm long; pedicel 4-5 mm long; ovary 1 mm long, trialate; **sepals** light yellow, spotted with purple, more or less in transverse bars on the dorsal, subcarinate, the dorsal sepal ovate, subacute, concave, the blade 8.5 mm long, 2.5 mm wide, 3-veined, contracted into a slender, terete tail, slightly thickened toward the tip, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, 9 mm long, 2.75 mm wide, 3-veined, connate 1.5 mm, contracted into thick, clavate tails nearly 1 mm broad, with a transverse callus above the decurved base; **petals** heavily spotted with purple, unequally subquadrate, 1.25 mm long, 1.75 mm wide, 2-veined, slightly thickened on either side of the center, the apex broadly obtuse, both margins broadly rounded angle above the middle; **lip** purple, unguiculate, the blade elliptical-obovate, acutely deflexed near the middle, 1.5 mm long expanded, 1.25 mm wide, the apex rounded, the base above the claw with a pair of obtuse, retrorse angles, the disc with a pair of obtuse lamellae below the middle, the claw broad, 1 mm long, bilobulate at the base, concave, hinged to the apex of the column-foot; **column** green, 2 mm long, winged from below the middle, incised at the apex into acute, antrorse teeth, the foot 2 mm long.

ECUADOR: **Morona-Santiago**: collected near El Pangui, alt. 1000 m, cultivated at Ecuagenera, Gualaceo, 2 Feb. 2002, *A. Hirtz 8129* (Holotype: MO), C. Luer illustr. 20195.

Superficially, this small species with thickly coriaceous leaves and purple-spotted flowers, resembles the long-tailed, Brazilian *Dryadella lilluputiana*. *Dryadella clavellata*, however, is quickly distinguished by the thick, clavate tails of the lateral sepals. They are reminiscent of the tails of *Trichosalpinx caudata* Luer & R.Escobar and *Actias luna* (the luna moth). The only other noteworthy feature is the deeply incised tip of the column into acute teeth.

Dryadella crassicaudata Luer, sp. nov.

Ety.: From the Latin *crassicaudatus*, "thickly caudate," referring to the thick sepaline tails.

Species haec *D. lilliputianae* (Cogn.) Luer affinis, sed sepalorum caudis brevioribus crassioribusque differt.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-3 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical, semiterete, obtuse, 18-21 mm long, 3-4 mm wide, 2 mm thick, narrowed below at the base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 1-1.5 mm long, enclosed by a bract; floral bract thin, 3-4 mm long; pedicel 4 mm long; ovary 1 mm long, triquetrous; **sepals** translucent greenish white, sparsely spotted with red, subcarinate, with the margins cellular, the dorsal sepal elliptical-oblong, concave, 6 mm long including the tail, 2 mm wide, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the apex acute, contracted into a thickened, subclavate tail 2.5 mm long, the lateral sepals ovate, oblique, 4.75 mm long including the tail, 1.5 mm wide, with a transverse callus above the decurved base, slightly connate at the base, the apex acute, contracted into a thickened tail 2 mm long; **petals** translucent green, suffused with red on the margins, subsagittate, 1.25 mm long, 1.25 mm wide, the apex broadly obtuse with a low, obtuse angle above, and a broad, obtuse lobule on the labellar margin; **lip** red, long-unguiculate, the blade subquadrate, 1 mm long, 1 mm wide, the apex broadly rounded, decurved, the base above the claw with a pair of acute, retrorse lobes, the disc with a short pair of obtuse calli below the middle, the claw 0.5 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** red, 1.25 mm long, longitudinally winged above the middle, the foot thick, 1 mm long.

PERU: **Amazonas**: Moyabamba, collected by Morgan, Aug. 1986, flowered in cultivation at Great Lakes Orchids, Michigan, 15 Dec. 1986, *C. Luer 11650* (Holotype: MO). Without locality, *D. Bennett 6175* (MO), C. Luer illustr. 16957.
COLOMBIA: Without locality, collected by Hubein, cultivated by B. Würstle in Spielberg, Germany, 21 Sept. 1981, *C. Luer 6519* (SEL).

This little species is similar to Brazilian *Dryadella lilliputiana* both florally and vegetatively with very small, semiterete leaves. Instead of long and slender, the tails of the sepals are shorter, thick, and rigid. Although the collections cited above "look alike," they could be variations of other unrecognized species, or they could be disjunct, boreal variations of *D. lilliputiana*.

Dryadella crenulata (Pabst) Luer, Selbyana 2: 371, 1978.

Bas.: *Masdevallia crenulata* Pabst, Bradea 2: 66, 1976.

Ety.: From the Latin *crenulatus*, "crenulate," referring to the margin of the blade of the lip.

Plant medium in size, epiphytic, densely caespitose; roots slender. Ramicauls erect, 1.5-2.5 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, subacute to acute, 4-7 mm long, 6-8 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 2-3 mm long, enclosed by a sheath, from low on the ramicaul, the flowers widely spread and facing downward; floral bracts thin, imbricating, 10-12 mm long; pedicel 10-13 mm long; ovary 2 mm long, thickly trialate; **sepals** light green, diffusely dotted with purple, subcarinate, the dorsal sepal ovate, acute, long-caudate, 17 mm long including the tail 12 mm long, 3.5 mm wide, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, long-caudate, 14 mm long including the tail 9 mm long, 3.25 mm wide, connate 0.5 mm at the base, with a pink, transverse callus medially above the decurved base; **petals** translucent greenish white, marked with black, broadly ovate-suboblong, 2 mm long, 2 mm wide, the apex broadly rounded, with a small, acute angle on the upper margin and a large, rounded angle on the lower margin above the base; **lip** purple, edged in deep purple, unguiculate, the blade obovate, 2.25 mm long, 1.75 mm wide, the apex broadly rounded, denticulate, the base above the claw with a pair of acute, retrorse lobules, the disc with a pair of low, rounded lamellae below the middle from the basal lobules, the claw 0.75 mm long, channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green suffused with rose, 2 mm long, with denticulate wings above the middle, the foot equally long, thick with the apex of the ovary.

BRAZIL: **Espírito Santo**: Munic. of Domingos Martins, flowered in cultivation 7 Oct. 1975, *R. Kautsky s.n.* (Holotype: HB). Without locality, imported by B. Würstle from G. Pabst, flowered in cultivation in Spielberg, Germany, 7 Sept. 1981, *C. Luer 6469* (SEL).

This Brazilian species is easily identified by the long-caudate sepals of downward-facing flowers. The straight tail of the dorsal sepal points forward horizontally, while the tails of the lateral sepals decurve upward behind the flower. The dark purple margin of the lip is denticulate as well as the wings of the column.

Dryadella cristata Luer & R.Escobar, Orquideología 15: 126, 1982.

Ety.: From the Latin *cristatus*, "crested," in reference to the crested midvein of the petals.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 6-12 mm long, partially enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical, subacute, 18-40 mm long, 4-6 mm wide, gradually narrowed below to the base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle 3 mm long, enclosed by a thin, acuminate sheath, from near the base of the ramicaul; floral bracts thin, acuminate, imbricating, 3-6 mm long; pedicel 5-7 mm long; ovary 2 mm long, trialate; **sepals** greenish, diffusely marked with purple, mostly in tiny transverse bars, the dorsal sepal ovate, concave, acute, thickened at the apex, 9 mm long, 5 mm wide, connate to the lateral sepals for 1-2 mm to form a sepaline cup, the lateral sepals ovate, oblique, shortly acuminate, acute, 8 mm long, 4.5-5 mm wide, connate at the base, with a transverse callus above the decurved base; **petals** translucent yellow, marked with dark purple, subsagittate, 3.5-4 mm long, 3.5 mm wide, with oblique, obtuse marginal angles above a subunguiculate base, verrucose externally, with a thin, erect carina along the midvein; **lip** dark purple, long-unguiculate, the blade subquadrate, 2.5 mm long, 2.25 mm wide, the apex broadly obtuse-retuse, and reflexed, the base above the claw with a pair of subacute lobules directed posteriorly, the disc with a low rounded pair of diverging calli from the bases of the lobules, the claw 1 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with purple, 2.5 mm long, longitudinally undulate-winged in the distal two-thirds, the foot bright rose, equally long.

COLOMBIA: **Valle del Cauca**: Alto de El Militar, collected by J. Miranda in 1977, flowered in cultivation by Amalia Lehmann de Sarria in Popayán, 26 July 1978, *R. Escobar 1981* (Holotype: JAUM; Isotype: SEL), C. Luer illustr. 2984. Cultivated at Ecuagenera without locality, *A. Hirtz 8804* (MO).

This species is uncommon, known only from a few collections from southern Colombia. In habit it is indistinguishable from the frequent and sympatric *Dryadella simula*. The flowers of the two species are also of similar size and with spotted, ovate, slightly acuminate sepals, but *D. cristata* can be distinguished by the sagittate petals that are verrucose externally with a deep purple crest. The lips and columns of the two are also similar.

Dryadella cuspidata Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 160, 1999.

Ety.: From the Latin *cuspidatus*, "cuspidate," referring to the pair of triangular, toothlike processes of the column.

Plant medium in size to large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 6-12 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, coriaceous, narrowly linear-elliptical, subacute to acute, 4-6.5 cm long, 5-6 mm wide, gradually narrowed below to the base. **Inflorescence** a successively few-flowered raceme borne by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 5-6 mm long; pedicel 3-4 mm long; ovary 1 mm long, tricarinate; **sepals** dull green, dotted with brown, subcarinate, the dorsal sepal oblong, acute, concave, 9-10 mm long including the tail 4-5 mm long, 3-4 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, 9 mm long including the tail 4 mm long, 3 mm wide, connate 0.5 mm at the base, with a transverse callus above the decurved base; **petals** translucent, suboblong, 2 mm long, 2.5 mm wide, the apex broadly rounded, with the upper margin with a minute angle, and with a decurved, obliquely triangular lobe on the lower margin; **lip** light brown, unguiculate, the blade elliptical, 2.5 mm long, 2 mm wide, the apex rounded, the base above the claw with a pair of acute, retrorse lobules, the disc with a pair of low calli below the middle, the claw broad, 1 mm long, bilobulate at the base, concave, hinged to the apex of the column-foot; **column** 3 mm long, with a pair of descending, triangular processes near the middle, the foot nearly equally long.

ECUADOR: **Morona-Santiago**: Cordillera del Cutucú, epiphytic in forest along the new road between Mendez and Morona, alt. 950 m, 18 Jan. 1989, *C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13977* (Holotype: MO). **Napo**: Río Jatunyacu west of Tena, alt. 600 m, 21 Feb. 1982, *C. Luer & A. Hirtz 6920* (SEL); Río Jatunyacu above Shandia, alt. 650 m, *A. Hirtz & S. Ortega 5373* (MO). **Zamora-Chinchipe**: between Patuca and Santiago, flowered in cultivation 24 Apr. 1990, *F L Stevenson 91-424-1* (MO).

This species occurs on the lower, eastern slopes of the Andes of southern Ecuador. Superficially, it resembles *Dryadella simula*, but *D. cuspidata* is distinguished by long-caudate sepals; petals with an obliquely triangular lobe on the lower margin that overhangs the callus of the lip; and the column with a pair of prominent, acute, descending, toothlike lobes.

Dryadella dodsonii Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 161, 1999.

Ety.: Named in honor of Calaway H. Dodson who discovered this species.

Plant small in size for the genus, epiphytic, repent, the rhizome ascending, suberect, 2 mm long between ramicauls; roots slender. Ramicauls ascending, 2-3 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, narrowly linear, canaliculate, acute, 20-25 mm long, 2 wide, 1 mm thick, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower borne singly by a peduncle up to 1 mm long, enclosed by a sheath, from low on the ramicaul; floral bract thin, inflated, 3 mm long; pedicel 1.5 mm long; ovary 1 mm long, cellular-glandular; **sepals** yellow, diffusely dotted with red-brown, with the margins and veins cellular glandular externally, the dorsal sepal oblong, concave, 3.5 mm long, 2 mm wide, the apex obtuse, contracted into a thick tail 3.5 mm long, connate to the lateral sepals for less than 1 mm to form a gaping sepaline cup, the lateral sepals broadly ovate, oblique, 3 mm long, 2.5 mm wide, the apex obtuse, contracted into a tail 3 mm long, connate at the base of 0.75 mm, with a transverse callus above the decurved base; **petals** translucent yellow, dotted with red, transversely ovate-sagittate, 1.5 mm long, 2.5 mm wide, the apex transversely obtuse, with an obtuse angle on the lower margin at the base with a small callus; **lip** light brown, long-unguiculate, the blade subquadrate, the rounded apex reflexed, 2 mm long, 2 mm wide, the disc with a pair of low, conical calli below the middle, the claw 1.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** slender, 2 mm long, longitudinally winged above the middle with the margins erose, the foot channeled, equally long.

ECUADOR: **Esmeraldas**: epiphytic in moss in pluvial forest west of Lita toward San Lorenzo, alt. 220 m, collected by C. H. Dodson, N. Williams & M. Whitten, flowered in cultivation at Río Palenque, 15 Aug. 1991, *C. H. Dodson 18798* (Holotype: MO), C. Luer illustr. 15527; same area, alt. 300 m, 12 Jan. 1992, *C. Luer, A. Hirtz et al. 15580* (MO).
COLOMBIA: **Valle del Cauca**: Buenaventura, Quebrada Yesqueros, old road between Cali and Buenaventura, alt. 50 m, 9 May 1997, *J.T. Otero & B. Angulo C. 1003* (CUVC, MO).

This little species, superficially resembling a species of *Pachyphyllum*, was found growing in deep moss in lowland northwestern Ecuador where the rainfall is exceedingly great. *Dryadella dodsonii* is distinguished by the repent, ascending, suberect to erect habit with suberect, slender leaves two millimeters wide. The peduncle and pedicel of the tiny flower are extremely short, placing the flower at the bottom of a leaf. The sepals are spotted, with slender tails about as long as the blade, and the broad, flabellate petals are extremely short. The lip is not remarkable.

Dryadella dressleri Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 162, 1999.

Ety.: Named in honor of Dr. Robert L. Dressler, formerly of the Smithsonian Tropical Research Institute in Balboa, Canal Zone, who discovered many new species during his many years in Panama, including this one.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 1-3 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, subacute to obtuse, 15-35 mm long, 5-6 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 3 mm long; pedicel 1-1.5 mm long; ovary 1 mm long, trialate; **sepals** greenish, diffusely marked with purple in small, transverse bars, the dorsal sepal ovate, concave, subacute, acuminate into a short tail, 6.5-7 mm long, 2-2.5 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, acuminate, 6-6.5 mm long, 2.5-3 mm wide, barely connate at the base, with a transverse callus above the decurved base; **petals** greenish brown, subquadrate, sagittate, 2 mm long, 2 mm wide, the apex obtuse, obtusely angled on both margins below the apex; **lip** orange-brown, long-unguiculate, the blade subquadrate, the sides and apex reflexed, 1.5 mm long, 1.5 mm wide, the apex broadly rounded, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low rounded pair of calli from the claw flanking a deep, central sulcus, the claw 0.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with purple, 2 mm long, longitudinally winged in the distal half, the foot equally long.

PANAMA: **Canal Zone**: in forest along Río Piedras near Colón, alt. ca. 100 m, collected by R.L. Dressler, flowered in cultivation in Balboa, 18 Feb. 1985, *C. Luer 10627* (Holotype: MO); Quebrada López, alt. 30 m, 11 Feb. 1940, *P.H. Allen 2115* (MO); Santa Rita Ridge near Colón, alt. 100 m, collected by F L Stevenson, flowered in cultivation in Chamblee, GA, 26 Jan. 1975, *C. Luer 500B* (SEL). **Colón**: road to Puertobelo, Río Gaunche, 6 Oct. 1975, *J.T. Witherspoon & F. Witherspoon 8682* (MO). **Panama**: along the Llano-Carti road, alt. 500 m, 2 Dec. 1983, *C. Luer, J. Luer, H. Butcher & A. Maduro 9216* (SEL).

This species, apparently confined to the lowlands of central Panama, is most closely related to *Dryadella sororcula* from western Panama and Central America. The habit is small, but the transversely banded flowers are nearly as large as those of the similar *D. simula* from the Andes. The three sepals are narrowly ovate and more or less thickly caudate, the tails almost as long as the blades. The sagittate petals are similar to those of *D. sororcula*. The characteristic lobule below the apex of the petal of *D. simula* is not present. In common with *D. sororcula* the blade of the lip is deeply channeled centrally between low, rounded calli.

Dryadella edwallii (Cogn.) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia edwallii* Cogn., Fl. Bras. 3(4): 553, 1906.

Ety.: Named in honor of G. Edwall who discovered this species.

Plant medium in size for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 6-14 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, more or less suffused with purple, thickly coriaceous, linear-elliptical, subacute, 2.5-4.5 cm long, 3-5 mm wide, narrowed below to the base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 3-4 mm long, mostly enclosed by a bract at the base, from near the apex of the ramicaul; floral bract thin, 5-10 mm long; pedicel 15-25 mm long; ovary 3-4 mm long, trialate; **sepals** yellow or yellow-orange, diffusely spotted

with purple or brown, the dorsal sepal ovate, concave, the blade 7-8 mm long, 5 mm wide, the apex subacute, contracted into a thick, yellow-green tail 6-9 mm long, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, the blade 7 mm long, 4.5 mm wide, the apex acute, acuminate into the tail 5-9 mm long, with a transverse callus above the deflexed base, connate 1 mm at the bases; **petals** translucent yellow, spotted with purple, transversely sagittate, 3.5 mm long, 3.5 mm wide, the apex broadly obtuse, subacutely angled on both margins, the labellar margin callous toward the base; **lip** yellow, long-unguiculate, the blade obovate-orbicular, 3.5 mm long, 3 mm wide, the apex broadly rounded, decurved, the base above the claw with a pair of acute, retrorse lobules, the disc with a pair of angled calli diverging from the base of the claw, the claw 1.5 mm long, concave, bilobulate at the base, hinged to the apex of the column-foot; **column** yellow, marked with purple, 4 mm long, longitudinally winged above the middle, the foot equally long, thick with the apex of the ovary.

BRAZIL: **São Paulo**: Campos da Bocaina, (Comm. Geogr. & Geol. 2302) *G. Edwall 2302* (Holotype: BR; Isotype K); Serra da Bocaina, alt. 1800 m, 24 Apr. 1951, *A. C. Brade 21142, 21143* (RB); Serra do Mar, Carvalho, 7 Nov. 1911, *P. Dusén 13322* (S); Serra do Mar Monte, Alegro, alt. 900 m, 17 Nov. 1910, *P. Dusén 10850* (S); same area, 3 Nov. 1911, *P. Dusén 13294* (S); same area, 16 Nov. 1915, *P. Dusén 17334* (S, K); Ypiranga, Serra do Mar, 2 Nov. 1909, *P. Dusén 6970* (HBG, S); Alto da Serra, Encrugilhada, Loijes, alt. 900 m, 30 Oct. 1962, *Reitz & Klein 13924* (B).. **Paraná**: Caiguava, alt. 900-1200 m, 19 Nov. 1909, *P. Dusén 8987* (NY, S); Piraquara, Serra do Emboque, alt. 1200 m, 3 Dec. 1970, *G. Hatschbach 25749* (K); São José dos Pinhais, Rio Pequeno, alt. 900 m, 5 Nov. 1969, *G. Hatschbach 22850* (MO); São José dos Pinhais, Zinco, 11 Nov. 1911, *R. Kummrow 2082* (AMES). **Rio de Janeiro**: without locality, *A. Glaziou 17802* (K); *A. Glaziou s.n.* (BR). **Santa Catarina**: Pilões, Palhoça, alt. 350 m, 6 Sept. 1956, *Reitz & Klein 3624* (S); Rio Santa Catarina, Palhoça, Morro do Cambirela, alt. 600 m, 26 Sept. 1957, *J.A. Rohr 2323* (B).

This species is well represented in living collections of orchids, probably because it freely produces comparatively large (one of the largest in the genus), long-pedicellate, long-tailed, spotted flowers. However, it is similar to a large variation of the variable and widely distributed *Dryadella zebrina*. One of the very few differences is the larger lip, about three millimeters long and wide as compared to about two millimeters long and wide.

Dryadella elata (Luer) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia elata* Luer, Phytologia 39: 199, 1978.

Ety.: From the Latin *elatus*, "tall," in reference to the lengths of the ramicauls and leaves compared to other species of the genus.

Plant large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 10-40 mm long, partially enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, fleshy, coriaceous, narrowly linear-elliptical, acute, 30-90 mm long, 5-6 mm wide, narrowly cuneate below to the base. **Inflorescence** a solitary flower borne successively in a congested raceme near the apex of the ramicaul; peduncle less than 10 mm long, with a bract at the base; floral bract thin, 3 mm long; pedicel 3 mm long; ovary 1.5 mm long, trialate; **sepals** orange, spotted with red-brown, the dorsal sepal elliptical-obovate, acute, concave, 6 mm long, 3 mm wide, connate to the lateral sepals for less than 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, shortly acuminate, acute, 4 mm long, 2 mm wide, with a transverse callus above the decurved base, slightly connate at the base; **petals** red-brown, dolabriform, multi-angled, 3 mm long, 2.5 mm wide, the apex subacute, obtusely angled on the upper margin, with a broad, subacute, thickened, uncinate angle on the labellar margin; **lip** orange-brown, long-unguiculate, the blade suborbicular, 1.5 mm long, 1.5 mm wide, the apex rounded, denticulate, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low pair of converging calli from the bases of the lobules, the claw 1 mm long, bilobulate at the base, lightly channeled longitudinally, hinged to the apex of the column-foot; **column** red-brown, 2 mm long, longitudinally winged above the middle with an acute tooth on each side just below the middle, the foot 1.5 mm long.

ECUADOR: **Manabí**: epiphytic in low mountains between Quevedo and Puerto Viejo, alt. ca. 500 m, collected by C. Luer, J. Luer & C. Dodson, July 1977, flowered in cultivation 29 Oct. 1977, *C. Luer 2111* (Holotype: SEL); same collection, flowered in cultivation by *C.H. Dodson 6857* (cloned from holotype: MO); type-plant cultivated by P. & A. Jesup in Bristol, CT., flowered in cultivation 10 Dec. 1988, *C. Luer 13796* (cloned from holotype: MO). **Guayas**: near Pedro Carbo, alt. ca. 100 m, 3 Jan. 1942, *O. Haught 3123* (AMES, US), C. Luer illustr. 19277.

This species is apparently endemic in the low, coastal areas of western Ecuador where it has been found only a few times. Vegetatively, it is large for the genus with the rather stout, elongated ramicauls and narrow leaves. The small, orange,

red-spotted flowers are produced singly on short peduncles and pedicels in a fascicle near the apex of the ramicaul. The apices of the sepals are acute without forming tails. The petals are proportionately large with a prominent lobe on the lower margin. The rounded apex of the lip is fimbriate.

This species was chosen the type of the genus, because at the time that the genus was proposed, the types of the two oldest known species (*Dryadella aviceps* and *D. auriculigera*) were sequestered at AMES.

Dryadella espirito-santensis (Pabst) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia espirito-santensis* Pabst, Bradea 1(31): 329, 1973.

Ety.: Named for Espírito Santo, the state where the species was collected.

Plant relatively large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 1-1.5 cm long, enclosed by thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly linear-elliptical, acute, up to 7-11 cm mm long, 6-8 mm wide, narrowly cuneate below to the base. **Inflorescence** a possibly solitary flower; peduncle unknown; pedicel unknown; ovary unknown; **sepals** purple with minute purple spots, dimensions unpublished, densely granular-hispidous within, the dorsal sepal broadly elliptical, estimated 8 mm long, 5 mm wide, subacute, very shortly caudate, connate basally to the dorsal sepal to form a sepaline cup, the lateral sepals subacute, ovate, oblique, estimated 8 mm long, 4 mm wide, very shortly caudate, with a transverse lunate callus toward the base; **petals** minutely and densely granular-pubescent, more or less oblong with a descending lobule above the middle, 2 mm long, 1.5 mm wide, the apex narrowly rounded; **lip** long-unguiculate, the blade ovate, obtuse, bicarinate, 2 mm wide, probably 3 mm long, entire, the base above the claw with a pair of acute, retrorse lobules, bilobulate at the base of the claw, the claw 2 mm long, 0.4 mm wide, entire expanded length of the lip 5.5 mm long, hinged to the apex of the column-foot; **column** 1 mm long, longitudinally winged above the middle.

BRAZIL: **Espírito Santo**: Redentor, near Pedra Azul, alt. 1200 m, 25 Sept. 1972, *R. Kautsky 381* (Holotype: HB).

This species, unfortunately known from only the type-collection that is now lost, has unique features not found in other species. The leaves exceed 10 centimeters, and are nearly one centimeter broad. The inflorescence appears to be very short and single-flowered. Most remarkable, the sepals and petals are densely granular-pubescent, the apices of the sepals are shortly caudate, and the oblong petals have a descending lobule above the middle. The lip does not seem remarkably different from most others. The accompanying illustration of the flower is a revision of the sketch published by Pabst.

Dryadella fuchsii Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 162, 1999.

Ety.: Named in honor of the late Fred Fuchs, Jr. of Naranja, Florida, who so generously shared his many collections.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 3-5 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** dark green, suffused with purple along the margins, erect, coriaceous, narrowly linear-obovate, subacute to acute, 15-27 mm long including an ill-defined petiole 5-8 mm long, 3-4 mm wide, gradually narrowed below into the petiole. **Inflorescence** a successive flower borne by a peduncle 1-2 mm long, from low on the ramicaul; floral bracts thin, speckled with purple, 2 mm long; pedicel 2-3 mm long; ovary 1 mm long, tricostate; **sepals** light green, with transverse, purple spots, subcarinate, the dorsal sepal oblong-ovate, acute, acuminate into a short tail, 5 mm long including the tail 1.5-2 mm long, 2 mm wide, barely connate to the lateral sepals to form a sepaline cup, the lateral sepals broadly ovate, oblique, obtuse, contracted into a tail 1-1.5 mm long, 3.5 mm long including the tail, 2.25 mm wide, barely connate at the base, with a transverse callus above the decurved base; **petals** translucent green, suffused with purple, suboblong, 1.75 mm long, 1.5 mm wide, the apex broadly obtuse, with the upper margin obtusely angled, and with an acute angle on the lower margin; **lip** brownish green, unguiculate, the blade elliptical-oblong, 1.25 mm long, 1.25 mm wide expanded, the apex rounded, deflexed, the base above the claw acutely angled, the disc with a small pair of acute, antrorse calli just below the middle, the claw broad, 0.5 mm long, minutely bilobulate at the base, concave, hinged to the apex of the column-foot; **column** mottled with purple, 2 mm long, longitudinally winged above the middle, the foot equally long.

HONDURAS: Without locality, collected by F. Fuchs, flowered in cultivation, 31 Aug. 1981, *C. Luer 6450* (Holotype: SEL). **Atlantida**: near Tela, Lancetilla Valley, 16 Mar. 1923, *O. Ames II 206* (AMES). **Cortes**: Santa Cruz de Yojoa, alt. 2,000 ft., 14 Nov. 1933, *J.B. Edwards 593* (AMES) **Gracias a Dio**: along Río Platano near Curi, near sea level, 24 Sept. 1976, *F. Matthews s.n.* (SEL).
NICARAGUA: **Chontales**: Babilonia Mine, alt. 750 m, *A. Heller 6972* (SEL). **Zelaya**: Cerro Musún, alt. 900 m, *A. Heller 5081* (SEL). **Granada**: Summit of Volcán Mombacho, alt. 1200 m, *J. Atwood & Neill 7042* (MO).
EL SALVADOR: **Morazán**, Perquín-Sabanetas, alt. 1700 m, Mar. 1965, *O. Pank s.n.* (?), Hamer 155; same locality, alt. 1750 m, *H. Hein s.n.* (?), Hamer 424.
COSTA RICA: **Guanacaste**: Los Ayotes, near Tilarán, alt. 500-700 m, 21 Jan. 1926, *P.C. Standley & J. Valerio 45606* (AMES); Vicinity of Tilarán, alt. 500-650 m, 10-31 Jan. 1926, *P.C. Standley & J. Valerio 44411* (AMES).

This species is relatively frequent in Central America, and customarily it has been identified as a small variation of the Andean *Dryadella simula*. It is distinguished from the latter by a much smaller habit with slender leaves less than three centimeters long; smaller, short-stemmed flowers; shortly tailed sepals; petals with an acute angle on the lower margin instead of the typical lobule; and a lip with a small pair of acute, antrorse calli just below the middle.

Dryadella gnoma (Luer) Luer, Selbyana 2: 208, 1978.

Bas.: *Pleurothallis gnoma* Luer, Selbyana 3: 110, 1976.

Ety.: From the Latin *gnomus*, "a dwarf," in reference to the small habit.

Syn.: *Dryadella misasii* Luer & R.Escobar, Orquideología 13: 141, 1979, syn. nov.

Ety.: Named for Dr. Guillermo Misas U. of Medellín, Colombia, who discovered this species.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 3-6 mm long, enclosed by 2-3 thin, imbricating, tubular sheaths. **Leaf** erect, coriaceous, narrowly linear-obovate, acute to subacute, 15-35 mm long, 2.5-5 mm wide, gradually narrowed below to the base. **Inflorescence** a solitary flower borne successively in a congested, few-flowered raceme by a peduncle less than 1 mm long, with a bract at the base, from low on the ramicaul; floral bracts thin, 2-4 mm long; pedicel 2-3 mm long; ovary 1-1.5 mm long; **sepals** light green, the dorsal sepal ovate, concave, acute, 5-7 mm long, 2.5 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, obtuse, abruptly short-acuminate, 4-6 mm long, 2-2.5 mm wide, with a poorly defined transverse callus above the base, connate 1 mm at the base; **petals** translucent yellow, marked with purple, suboblong-sagittate, 2.5-3 mm long, 1.5-2 mm wide, the apex obtuse, obtusely angled on both margins near the apex; **lip** heavily suffused or marked with dark purple, unguiculate, the blade oblong, 2 mm long, 1 mm wide, the apex rounded, the base obtusely to acutely angled above the claw, the disc concave, channeled from the claw, the claw 0.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, suffused with purple, 2 mm long, longitudinally winged on the distal half, denticulate at the apex, the foot equally long.

ECUADOR: **Napo**: epiphytic in tall forest west of Tena, alt. ca. 600 m, 26 July 1975, *C. Luer, G. Luer & S. Wilhelm 698* (Holotype: SEL); Bermejo, alt. 450-600 m, Apr. 1990, *A. Hirtz 4831* (MO); Cabañas Alliñahui near Hatun-Sacha, alt. 450 m, Mar. 1991, *A. Hirtz & X. Hirtz 5341* (MO).
PERU: **Puno**: Carabaya, Colinoso, headwaters of Río Candamo, alt. 800 m, 14 Nov. 1996, *F. Cornejo & A. Balarezo 2702* (MO).
COLOMBIA: **Chocó**: Bahia Solano, Alto de Nabugá, alt. 500 m, 9 Jan. 1975, collected by G. Misas, cultivated by O.J. Arango at Estrella, *R. Escobar 1451* (JAUM, type of *D. misasii*), flowered 29 Sept. 1977, *C. Luer 1869* (SEL); Río Ura, alt. 50-100 m, collected by H.-G. Seeger, Sept. 1986, flowered in cultivation at the Botanischer Garten Heidelberg, 1 Sept. 1987, *C. Luer 12904* (MO).
PANAMA: **Panama**: Cerro Jefe, alt. 900 m, 1 Dec. 1983, *C. Luer, J. Luer, H. Butcher & A. Maduro 9181* (SEL). **Bocas del Toro**: between Fortuna and Chiriquí Grande, collected by R.L. Dressler, flowered in cultivation 2 Aug. 1981, *C. Luer 6438* (SEL).
COSTA RICA: **Heredia**: "on CCC near intersection with SUA," 29 Sept. 1985, *J.T. Atwood 85-22* (SEL). **Puntarenas**: Buenos Aires, alt. 500 m, collected by T. Mulder, flowered in cultivation in Wageningen, Holland, 3 Sept. 1984, *C. Luer 10440* (MO).

This little species occurs locally, but it is widely distributed at relatively low altitudes from Costa Rica through the Andes, where it was described as *Dryadella misasii* in Colombia, and into Peru. It is relatively constant morphologically except for a usual variation of the marginal angles of the petals. The flower does not open

widely, and together with acute sepals and inconspicuous, or rudimentary transverse calli above the base of the lateral sepals, a hallmark of the genus *Dryadella*, it looks much like a *Pleurothallis*. The shovel-shaped lip distinguishes this species from all others in the genus. The blade is oblong, subtruncate, and superficially channeled, neither carinate nor deflexed near the middle. The basal angles of the blade above the claw are either obtuse or acute.

Dryadella gomes-ferreirae (Pabst) Luer, Selbyana 2: 208, 1978.

Ety.: Named for Augusto Burle Gomes-Ferreira, who cultivated the species.

Bas.: *Masdevallia gomes-ferreirae* Pabst, Bradea 2(10): 51, 1975.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls slender, erect, 1-2 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical, subacute, 3.5-4 cm long, 5 mm wide, 2 mm thick, gradually narrowed below to an ill-defined petiole ca. 0.5 long. **Inflorescence** a single flower, produced successively, borne by a peduncle 1-2 mm long, enclosed by a bract, from low on the ramicaul; floral bract thin, 3 mm long; pedicel 2.5-3 mm long; ovary triquetrous, 1 mm long; **sepals** yellow, spotted with brown or purple, the dorsal sepal ovate, concave, subcarinate, 5.5 mm long including a thick tail 1.5 mm long, 2.5 mm wide expanded, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the apex subacute, thickened, contracted into the tail, the lateral sepals ovate, oblique, 5 mm long, 2.25 mm wide, with an oblique, transverse callus above the decurved base, connate 1 mm at the base, the apex obtuse, contracted into a tail 1.5 mm long; **petals** translucent yellow, irregularly spotted with purple, oblong-subhastate, transversely obtuse, 1.75 mm long, 1.75 mm wide, with rounded lobules on either margin below the apex; **lip** yellow, unguiculate, the blade obovate, 1.5 mm long, 1.5 mm wide, decurved near the middle, the apex broadly rounded, the base above the claw with a pair of acute, retrorse lobules, the disc with a pair of erect, acute lamellae converging from the lobules, the claw 0.5 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, 2 mm long, winged above the middle, the foot thick, 2 mm long.

BRAZIL: **Pernambuco**: without locality, collected by Severino Parasita, flowered in the collection of *A.B. Gomes-Ferreira 294* (Holotype in liquid: HB, lost). Without collection data, obtained from the Munich Botanical Garden, cultivated in Tarporley, England, 1999, by *S. Manning 961021* (MO), C. Luer illustr. 19272.

This species is poorly known. The specimen described and illustrated herein is near the original description, and it is identified and cultivated as *Dryadella gomes-ferreira* in the Munich Botanical Garden. There is no single distinctive character; further study is needed.

Dryadella greenwoodiana Soto Arenas, Salazar & Solano, Icones Orch. (Mex.) pts. 2-3: pl. 550, 2003.

Ety.: Named in honor of Edward Warren Greenwood (1918-2000), of Ottawa, Canada, but long-time resident of Oaxaca, Mexico, where he became a noted investigator of the Orchidaceae.

Plant very small, epiphytic, ascending to densely caespitose; roots fleshy. Ramicauls erect, 3-4 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, ellipsoid, subacute to obtuse, 11-15 mm long, 4.5 mm wide, 2 mm thick, cuneate below into the sessile base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 2-3 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 3 mm long; pedicel 4 mm long; ovary 1.5 mm long, 1 mm wide, trialate; **sepals** yellow-green, heavily marked with dark purple, fleshy, subcarinate, the dorsal sepal triangular, acute, concave, 5 mm long, 2.5 mm wide at the base, 3-veined, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate-triangular, oblique, acute, 4.25 mm long, 1.75 mm wide, 3-veined, connate 0.5 mm at the base, with a transverse callus above the decurved base; **petals** heavily marked with purple, suboblong, subhastate, 1.25 mm long, 1 mm wide, 2-veined, slightly thickened on either side of the center, the apex broadly obtuse, both margins with a subacute angle above the middle; **lip** dull green, unguiculate, the blade elliptical-obovate, acutely deflexed near the middle, 1.5 mm long expanded, 1.3 mm wide, the apex rounded, the base above the claw with a pair of obtuse, retrorse angles, the disc with a pair of obtuse lamellae below the middle, the claw broad, 0.75 mm long, bilobulate at the base, concave, hinged to the apex of the column-foot; **column** green, 1.5 mm long, winged from below the middle, irregularly incised with a retrorse processes below the middle, the foot 1.75 mm long.

MEXICO: **Oaxaca**: Ixtlán, between Ixtlán and Juárez-TAlea de Castro, alt. 2000 m, 25 Mar. 2000, cultivated 2 July 2001, *M. Soto 9439* (Holotype: AMO).
GUATEMALA: **Guatemala**: Santa Cruz, San José Pinula, collected by Julio Fonseca, alt. 2100 m, June 2002, cultivated by *Moises Behar 163* (MO), C. Luer illustr. 20188.
EL SALVADOR: ?

This rare, very small species with thickly coriaceous leaves is similar vegetatively to *Dryadella dressleri* and *D. sororcula*; all the other tiny, thick-leaved species are found in South America. It is known from only one collection in Mexico and one collection in Guatemala. A drawing by Fritz Hamer in the *Orchids of El Salvador* could possibly represent this species, but the whereabouts of this specimen are unknown, if it exists at all.

The flowers of South American *D. lueriana* are extremely similar. The dorsal sepal is simply subacute without a tail, while the lateral sepals are triangular and acute. The petals are obtusely hastate, and the calli on the lip are low and rounded.

Dryadella guatemalensis (Schltr.) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia guatemalensis* Schltr., Repert. Spec. Nov. Regni Veg. 15: 201, 1918.
Ety.: Named for Guatemala, the country of origin of the species.

Syn.: *Masdevallia simula* var. *guatemalensis* (Schltr.) Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 34: 191, 1925.

Syn. (probable): *Masdevallia osmariniana* Braga, Acta Amazon. 7: 333, 1978.
Syn. (probable): *Dryadella osmariniana* (Braga) Garay & Dunst. Orchid. Venez. Ill. Field Guide 172, 1979.

Plant relatively large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 10-20 mm long, partially enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, sometimes suffused or dotted with purple, coriaceous, narrowly linear, acute, 60-100 mm long, 2-3 mm wide, narrowly linear below to the base. **Inflorescence** a succession of solitary flowers borne in a congested raceme by a peduncle 1-5 mm long, mostly enclosed by a bract at the base, from near the apex of the ramicaul; floral bract thin, 5-15 mm long; pedicel 5-12 mm long; ovary 1.5-3 mm long, tricrested; **sepals** yellowish, diffusely spotted with brown or purple, the dorsal sepal elliptical-ovate, acute, slightly acuminate, concave, 7-9 mm long, 4-5 mm wide, connate to the lateral sepals for 1-2 mm to form a sepaline cup, the lateral sepals ovate, oblique, shortly acuminate, acute, 6.5-8.5 mm long, 3.5-4 mm wide, with a transverse callus above the deflexed base, slightly connate at the bases; **petals** yellow-green, spotted with brown or purple, dolabriform, 3-3.5 mm long, 2.5-3 mm wide, the apex broadly obtuse, obtusely angled on the upper margin, with a broad, subacute, thickened, uncinate angle on the labellar margin; **lip** green, suffused and spotted with purple, long-unguiculate, the blade obovate-orbicular, 2.25-3 mm long, 2.25-2.75 mm wide, the apex rounded, deflexed, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low pair of angled calli diverging from the bases of the lobules, the claw 1.5-2 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** spotted with purple, 2-3 mm long, winged above the middle, the margins minutely erose, the foot 2-2.5 mm long.

GUATEMALA: **Alta Verapaz**: near Cubilgüitz, Aug. 1903, *H. von Türckheim II 490* (Holotype: W; Isotypes: AMES, G); alt. 350 m, Dec. 1901, Dec. 1903, *H. von Türckheim II 490* (US); Cubilgüitz, alt. 350 m, June 1904, *H. von Türckheim ii 490* (BR); Cubilgüitz, alt. 350 m, Oct. 1906, *H. von Türckheim 127* (P); near Cobán, collected by Otto Tinschert, flowered in cultivation in Guatemala, 19 Feb. 1981, *C. Luer 5847* (SEL); Sachichá, alt. 1500 m, collected by H. Ibañez, flowered in cultivation in Cobán, 14 Feb. 1990, *C. Luer 14656* (MO).
MEXICO: **Chiapas**: Ocozocoautla, Selva del Ocote, alt. 600 m, 27 Aug. 1972, *D.E. Breedlove 27525* (AMES). **Veracruz**: Volcán Santa Marta, alt. 300 m, collected by R.L. Dressler, July 1980, flowered in cultivation 4 July 1981, *C. Luer 6423* (SEL).
COSTA RICA: **San José**: between Candelaria and Atarrazú, Santa Maria, ca. 1867, *A. Endres 564* (W); without locality, collected by R. Jenny, flowered in cultivation in Bern, Switzerland, 31 May 1980, *C. Luer 5285* (SEL). Without locality, ca. 1860, *A. Endres s.n.* (W).
COLOMBIA: **Chocó**: Bahia Solano, without details, flowered in cultivation by M. & O. Robledo at La Ceja, 30 Sept. 1977, *C. Luer 1873* (SEL); Río Ura, alt. 50-100 m, collected by H.-G. Seeger, Sept. 1986, flowered in cultivation at the Botanischer Garten Heidelberg, 1 Sept. 1987, *C. Luer 12906* (MO).
BRAZIL: **Amazonas**: between Manaus and Itacoatiara, Apr. 1976, *O.P. Montiero & J. Ramos 675* (holotype of *M. osmariana*: INPA).

About 1860, Endres illustrated this species and suggested the name "Masdevallia tigrina." Not being described as *Masdevallia guatemalensis* until 1918, it has proved to be widely distributed in wet forests at low altitudes from Mexico and Guatemala into the Chocó of Colombia. A plant collected in Amazonian Brazil described as *M. osmariniana* could represent a disjunct distribution of *D. guatemalensis*. Although distinct with the very long, narrow leaves, *D. guatamalensis* has been confused with Andean *D. simula* with much shorter and broader leaves. Except for the shape of the petals, the flowers of the two species are superficially similar. The petals of *D. guatamalensis* lack the obliquely truncate apex with the lobule on the labellar margin seen in *D. simula*. Study of fresh material is needed.

Dryadella hirtzii Luer, Phytologia 46: 346, 1980.

Ety.: Named in honor of its discoverer, Alexander C. Hirtz of Quito, Ecuador.

Plant large for the genus, epiphytic, ascending repent to caespitose; roots thick, coarse. Ramicauls erect, 15-28 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, suffused with purple toward the base, coriaceous, narrowly linear-obovate, acute, 45-95 mm long, 5-6 mm wide, gradually narrowed below to the base. **Inflorescence** a succession of solitary flowers borne in a congested raceme by peduncles 1 mm long, near the apex of the ramicaul; floral bract thin, 5-6 mm long; pedicel 5-6 mm long; ovary 2 mm long, trialate; **sepals** green, spotted with purple, the dorsal sepal ovate, acute, shortly acuminate, concave, subcarinate, 9 mm long, 5 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals diverging, pusticulate, ovate, oblique, acute, 8 mm long, 3.5 mm wide, with a transverse callus just above the deflexed base, free at the base; **petals** yellow, marked with purple, pentangular, 2.5 mm long, 2 mm wide, the apex obliquely truncate, obtusely angled on the upper margin, with a narrowly obtuse angle on the labellar margin above the middle, thickened along the margin below the middle; **lip** yellow, diffusely marked with red, long-unguiculate, the blade suborbicular, widest below the middle, 2.5 mm long, 3 mm wide, the apex rounded, slightly undulate, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low pair of converging calli from the bases of the lobules, the claw 1.5 mm long, bilobulate at the base, lightly channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with purple, 3 mm long, longitudinally winged in the distal two-thirds, the foot 2.5 mm long.

ECUADOR: **Pichincha**: epiphytic in cloud forest near Río Silante, alt. 2000 m, 28 Oct. 1979, flowered in cultivation 21 Feb. 1980, *C. Luer, J. Luer & A. Hirtz 5199* (Holotype: SEL); south of Mojanda, May 1984, *A. Hirtz 1796* (MO); above Tandapi, alt. 2300 m, July 1984, *A. Hirtz 1821* (MO); between Calacalí and Los Bancos, alt. 2000 m, 19 Oct. 1999, *Linder Suin et al. 364* (MO, QCNE).

This species is apparently endemic in north-central Ecuador. Except for its larger habit, it is similar to the frequent *Dryadella simula*. Consul Lehmann, as quoted by Woolward in her 1896 monograph on *Masdevallia*, undoubtedly had this species in mind when he said that a long-leaved variation of *D. simula* grew on the western slopes of Mt. Corazón near Quito. It is distinguished by the ascending habit with thick roots and much longer leaves. The flowers of the two species are of similar size and color, but the lateral sepals of *D. hirtzii* are triangular and widely spread. The petals and lip are also similar, but the blade of the lip is widest below the middle while the blade of *D. simula* is widest above the middle.

Dryadella kautskyi (Pabst) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia kautskyi* Pabst, Bradea 1: 330, 1973.

Ety.: Named in honor of Roberto Kautsky who discovered this species.

Plant small, epiphytic, densely caespitose-ascending; roots slender. Ramicauls slender, erect, 5-8 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, mottled with purple, narrowly linear, semiterete, acute, 2-4.5 cm long, 1.5-2 mm wide, 1.5 mm thick, gradually narrowed below to the base. **Inflorescence** a single flower, produced successively in a congested, few-flowered raceme, borne by a peduncle 1 mm long, with a bract, from low on the ramicaul; floral bract thin, 3-5 mm long; pedicel 4-6 mm long; ovary triquetrous, 1 mm long; **sepals** yellow, dotted with brown or purple, the dorsal sepal ovate, concave, subcarinate, 6.5-8 mm long including a thick tail 2 mm long, 3 mm wide expanded, connate to the lateral sepals for barely 1 mm to form a sepaline cup, the apex acute, contracted into the tail, the lateral sepals ovate, oblique, obtuse, 5 mm long, 2.5 mm wide, with a transverse callus above the decurved base, connate 1 mm at the base, the margins cellular erose; **petals** trans-

lucent yellow, irregularly spotted with purple, oblong-subsagittate, transversely obtuse, 1.75 mm long, 2 mm wide, with an obtuse, more or less irregular angle on the upper margin of the apex, with a larger, rounded lobule on the labellar margin below the apex; **lip** yellow, long-unguiculate, the blade oblong-obovate, 2 mm long, 1.3 mm wide, deflexed near the middle, the apex broadly rounded, the margin cellular-erose, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a pair of erect, angled lamellae converging from the lobules, the claw 1 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, 2.5 mm long, winged above the middle with an acute angle on the lower edge of the wing, the foot thick, 2 mm long.

BRAZIL. **Espírito Santo**: Domingos Martins, Caixixe Frio, 30 Oct. 1972, *R. Kautsky 381* (Holotype: HB; Isotype: AMES); Venda Nova, Pedra Azul, alt. ca. 1000 m, collected 1986 by Waldyr Endsfeldz, flowered in cultivation in São Paulo, 25 Nov. 1989, *C. Luer 14478* (MO); without locality, flowered in cultivation at Orquideario Binot in Petropolis by Verboonen, 30 Nov. 1989, *C. Luer 14501* (MO).

This species is apparently endemic in southeastern Brazil where it does not seem to be uncommon. *Dryadella kautskyi* is distinguished by the very narrowly linear, semiterete leaves; an extremely short peduncle; small, yellow flowers dotted with purple or brown; sepals with short, thick tails, the concave dorsal sepal larger than a lateral sepal; irregular petals usually with a rounded lobule on the lower margin of the apex; and a lip with the rounded, anterior margin cellular-erose.

Dryadella lilliputiana (Cogn.) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia lilliputiana* Cogn., Fl. Bras. 3(4): 555, 1906.
Ety.: Named for Jonathan Swift's diminutive kingdom Lilliput.

Syn.: *Masdevallia paranaënsis* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7: 268, 1918.
Ety.: Named for the state of Paraná where the species was discovered.

Syn.: *Masdevallia melloi* Pabst, Bradea 2: 169, 1977.
Ety.: Named in honor of Dr. Arthur Ferreira de Mello, who discovered this species.

Syn.: *Dryadella melloi* (Pabst) Luer, Selbyana 2: 209, 1978.
Syn.: *Dryadella paranaënsis* (Schltr.) Luer, Selbyana 2: 209, 1978.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-6 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, more or less speckled with purple, thickly coriaceous, ovoid-fusiform to semiterete, acute, apiculate, 10-30 mm long, 2.5-3 mm wide, 2-2.5 mm thick, narrowed at the base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 2-4 mm long, enclosed by a sheath, from low on the ramicaul; floral bract thin, 4-5 mm long; pedicel 4-10 mm long; ovary 1.5-2 mm long, trialate; **sepals** translucent pale green to pale yellow, marked with purple, the dorsal sepal ovate-elliptical, concave, the blade 5-6 mm long, 3-4 mm wide, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the apex subacute to obtuse, contracted into a thickened, occasionally subclavate tail 5-9 mm long, total length 10-15 mm, the blades of the lateral sepals broadly ovate to suborbicular, oblique, 3-5 mm long, 2.5-3 mm wide, the apex obtuse, contracted into a thickened tail 5-7 mm long, total length 8-12 mm long, with a transverse callus above the deflexed base; **petals** translucent yellow-green, marked with red-purple, subsagittate, the apex obtuse with an obtuse angle on the upper margin and a more prominent obtuse angle on the labellar margin, 1.75-2.5 mm long, 1.75-2 mm wide; **lip** green, marked with purple, long-unguiculate, the blade obovate, 2-2.5 mm long, 1.5-2 mm wide, the apex broadly rounded, more or less minutely erose, decurved, the base above the claw with a pair of acute, retrorse angles, the disc with a pair of low, erect calli below the middle, the claw 0.75-1 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, marked with purple, slender, 2 mm long, winged above the middle, the foot thick, equally long.

BRAZIL: **São Paulo**: epiphytic at Campos de Bocaina, *G. Edwall s.n.* (Holotype: BR); Reserva Forestal da Boccuna, alt. 1600-1700 m, 8 May 1968, *D. Sucre et al. 3037* (RB); San Francisco do Sul, Cerro de Montiguria, alt. 1700 m, collected by Vitorino Paiva Castro, flowered in cultivation in São Paulo, 24 Nov. 1989, *C. Luer 14469* (MO). Without collection data, flowered in cultivation by the Verboonens at Orquideario Binot, Petrópolis, 30 Nov. 1989, *C. Luer 14502* (MO); obtained from C. Withner, flowered in cultivation by P. & A. Jesup in Bristol, CT., 9 Dec. 1988, *C. Luer 13805* (MO). **Paraná**: Villa Velha, 4 Feb. 1909, *P. Dusén 7279, 7663* (AMES, HBG, S); collected at Villa Velha, flowered in cultivation at B, 1918, *P. Dusén s.n.*, (holotype of *M. paranaënsis*: destroyed at B). **Rio de Janeiro**: mata pr. Patí do Alferes, alt. ca. 700 m, flowered in cultivation 20 July 1975, *A. de Mello MAS-10A* (holotype of *D. melloi*: reported to be HB); Planalto Serra da Bocaina, 14 Mar. 1965, *S. Vogel 768* (WU).
BOLIVIA: **La Paz**: Nor Yungas, cacao grove along Rio Coroico, north of Yolasa, alt. 1150 m, 1 Feb. 1980, *C. Luer, J. Luer & R. Vásquez 5065* (SEL).

This little species is widely distributed in southern Brazil, with one collection known from Bolivia. The little flowers nestle among the dense clusters of semiterete, spindle-shaped, or narrowly obovate leaves. The tails of the sepals vary between 4 and 9 millimeters in length and the tail of the dorsal sepal is sometimes more or less thickened or subclavate. The petals, lip and column are not unusual except for their very small size.

Dryadella linearifolia (Ames) Luer, Selbyana 2: 208, 1978.

Bas.: *Masdevallia linearifolia* Ames, Sched. Orchid. 5: 7, 1923.

Ety.: From the Latin *linearifolius*, "with linear leaves," in reference to the shape of the leaves.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 4-6 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, sometimes spotted with purple, thickly coriaceous, narrowly linear-elliptical, semiterete, narrowly obtuse, 25-38 mm long, 2-2.75 mm wide, gradually narrowed below to the base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 2 mm long, from near the apex of the ramicaul, enclosed by a bract; floral bract thin, 2-3 mm long; pedicel 4-5 mm long; ovary 1 mm long, trialate; **sepals** translucent greenish white, spotted with purple, subcarinate, the dorsal sepal elliptical-obovate, concave, 4 mm long, 2.5 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the apex acute, contracted into a slender, green tail 2.5 mm long, the lateral sepals ovate, oblique, 3 mm long, 2 mm wide, with a transverse callus above the decurved base, slightly connate at the base the apex acute, contracted into a slender tail 2 mm long; **petals** translucent green, spotted with purple, subsagittate, 2 mm long, 2 mm wide, the apex broadly obtuse with an obtuse angle above and an acute, uncinate angle on the labellar margin; **lip** green, irregularly suffused with purple, long-unguiculate, the blade suborbicular, 1.5 mm long, 1.25 mm wide, the apex rounded with the sides coarsely denticulate-erose, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a pair of rounded, calli converging from the bases of the lobules, the claw 1 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with purple, 2 mm long, longitudinally winged above the middle with a narrow, descending, acute process near the middle, the foot 2 mm long.

GUATEMALA: **Alta Verapaz**: Cubilqüitz, alt. 350 m, Aug. 1900, *H. von Türckheim 7784* (Holotype: AMES). **Peten**: epiphytic in forest around Tikal, alt. 180 m, collected by J. and C. Luer, Feb. 1981, flowered in cultivation 9 Aug. 1981, *C. Luer 6441* (SEL).
HONDURAS: **Comayagua**: Pito Solo, Lake Yojoa, alt. 2,000 ft., 6 Aug. 1932, *J.B. Edwards 211* (AMES). **Cortes**: epiphytic in rain forest, Nacimiento del Río Lindo, alt. 630 m, 28 Dec. 1946, *L.O. Williams & A. Molina R. 11367* (SEL), C. Luer illustr. 20826.
NICARAGUA: **Jinotega**: Tuma Grade, alt. 3,500 ft., date unknown, *A.H. Heller 11170* (SEL), C. Luer illustr. 20825.
MEXICO: **Chiapas**: El Real, alt. 650 m, Mar. 1956, *Ruth Oberg s.n.* (SEL).

This species is apparently endemic in forests of low altitudes in northern Mesoamerica. Vegetatively, it is similar to many of the other species in the genus with narrowly linear, thick leaves. The small, green, purple-spotted flowers are produced singly on short peduncles and pedicels in a fascicle near the apex of the short ramicaul. The apices of the sepals are acute with slender tails about 2 mm long. The apex of the lip is rounded with the sides denticulate-erose. The column has a pair of descending teeth near the middle.

Dryadella lueriana Carnevali & G.A.Romero, Novon 1: 73, 1991.

Ety.: Named for Carlyle A. Luer who recognized that this species was misidentified in *Venezuelan Orchids Illustrated, A Field Guide*, Dunst. & Garay, 1979, as *D. osmariniana*.

Plant small, epiphytic, shortly repent to caespitose; roots slender. Ramicauls erect or suberect, 2-4 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly linear-elliptical, acute, 10-13 mm long, 2.5-3 mm wide, narrowed below to the base. **Inflorescence** a solitary flower borne successively in a subcongested raceme up to 4 mm long with up to 4 flowers, by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 3 mm long; pedicel 3 mm long; ovary 0.75-1 mm long, trialate; **sepals** light brown, suffused with red especially along the veins, the dorsal sepal ovate, concave, 4.25 mm long, 2 mm wide, the apex acute, slightly thickened, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, acuminate, 3 mm long, 1.5 mm wide, connate 0.5 mm at the base, with a transverse callus above the decurved base, the margins cellular; **petals** orange, subquadrate, 1 mm long, 1 mm wide, the

apex broadly obtuse to rounded, with an acute angle on both margins; **lip** unguiculate, the blade obovate, 1.25 mm long, 1.25 mm wide, the apex decurved, broadly rounded, the base above the claw with a pair of acute, retrorse angles, the disc with a pair of obtuse lamellae below the middle, the claw 0.75 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** 1.5 mm long, longitudinally winged on the distal half with a pair of acute, descending teeth, bidentate at the apex, the foot equally long.

VENEZUELA: **Bolívar**: Cerro Guaiquinima, alt. 1650 m, May 1978, *G.C.K. & E. Dunsterville 1399* (Holotype: AMES; Isotypes: MO, VEN), C. Luer illustr. 14566.

This little species is known only from southeastern Venezuela where it was discovered by the late "Stalky" Dunsterville in a dense, wet, mossy forest near the summit of Cerro Guaiquinima. Dunsterville's illustration was published in the Venezuelan Orchids Field Guide identified as *D. osmariniana*. The latter species is considerably larger and is found at a low altitude along the Amazon River near Manaus.

Dryadella lueriana is distinguished by the very small, shortly repent habit; small, unspotted flowers with sepals less than five millimeters long; obtuse, subquadrate petals; a tiny lip with an obovate blade; and a winged column with a pair of acute, descending processes.

Dryadella marsupiata Luer, Selbyana 7: 100, 1982.

Ety.: From the Latin *marsupiatus*, "made into a bag or purse," in allusion to the configuration of the blade of the lip.

Plant medium in size for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 6-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly linear-obovate, obtuse, 25-40 mm long, 5 mm wide, gradually narrowed below to the base. **Inflorescence** a short, congested, successively several-flowered raceme borne by a peduncle about 1 mm long, from near the apex of the ramicaul; floral bracts thin, 3 mm long; pedicels 3-4 mm long; ovary 1 mm long, trialate; **dorsal sepal** yellow-green, mottled and suffused with rose especially along the three veins, elliptical, concave, 6 mm long, 3.5 mm wide, slightly acuminate to the acute apex, connate to the lateral sepals for less than 1 mm to form a sepaline cup; **lateral sepals** bright yellow, mottled with rose at the base, ovate, oblique, shortly acuminate, acute, 4 mm long, 2.3 mm wide, acutely deflexed below a transverse callus across the lower quarter, essentially free from each other at the base; **petals** translucent yellow-white, marked with purple, dolabriform, 4-angled, 1.75 mm long, 2 mm wide, the apex obtusely rounded, broadly angled on the upper margin, with a narrowly obtuse lobe on the labellar margin adjacent to marginal thickening; **lip** dark purple, long-unguiculate, the blade oblong with revolute margins, acutely folded 180° beneath itself near the middle 1.75 mm long, 2.75 mm long expanded, 1 mm wide, the inflexed apex rounded, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a pair of erect, angled, converging calli from the bases of the lobules, the claw 1 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with rose, 1 mm long, broadly winged from a subacute, marginal angle near the middle, the apex denticulate, the foot channeled, 1.5 mm long.

PERU: **Junín**: Chanchamayo near La Merced, alt. 1800 m, collected by M. Arias, Jan. 1981, flowered in cultivation by B. Würstle in Spielberg, Germany, 7 Sept. 1981, *Würstle 44* (Holotype: SEL), C. Luer illustr. 6468.

This species is known only from the original collection, but since little collecting of this genus has been done in Peru, it could prove to be frequent. The most unusual character of this species is the blade of the lip with markedly revolute sides as well as the elongated, apical two thirds of the blade. This apical portion is reflexed and appressed to the undersurface of the proximal portion of the blade.

Dryadella meiracyllium (Rchb.f.) Luer, Selbyana 2: 209, 1978.

Bas.: *Masdevallia meiracyllium* Rchb.f., Flora 69: 558, 1886.

Ety.: From the Greek *meirakyllion*, "a little strap," probably in reference to the slender leaves.

Plant small, epiphytic, densely caespitose; roots slender, purplish. Ramicauls erect, 5-20 mm long, partially enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly linear to semiterete, acute, 2-5 cm long, 2-3 mm wide, gradually narrowed below to the base. **Inflorescence** a solitary, sometimes long-pedicellate flower borne successively in a congested, few-flowered raceme by a pedun-

cle 2-6 mm long, with a bract at the base, from high on the ramicaul; floral bracts thin, 3-10 mm long; pedicel 3-15 mm long; ovary minutely cellular-glandular, 1-2 mm long; **sepals** translucent greenish, marked in spots and bars with purple, the blade of the dorsal sepal ovate concave, 5-6 mm long, 3.5-5 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the apex subacute to obtuse, contracted into a slender, pale yellow tail 1.5-4 mm long, the lateral sepals ovate, oblique, subacute to obtuse, 4.5-6 mm long, 2.5-3.5 mm wide, the apex contracted into a slender tail 1.5-4 mm long, with an erect, obtuse, transverse callus above the deflexed base, connate 1 mm at the base; **petals** translucent pale green, marked with purple, subquadrate-multiangled, 1.5-2 mm long, 1.5-2 mm wide, the apex subtruncate with the corners obtuse, the labellar margin with a distinct lobule near the middle, cellular-glandular above the base; **lip** purplish, long-unguiculate, the blade elliptical, 2.5 mm long, 2-2.5 mm wide, the sides and the apex decurved, the apex rounded, sometimes minutely denticulate, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low pair of calli converging from the bases of the lobules, the claw 1.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, slender, marked with red, 2.5 mm long, longitudinally winged on the distal half with a pair of slender, acute, descending teeth, the apex denticulate, the foot 2 mm long.

COLOMBIA: without locality, *F.C. Lehmann 3367* (Holotype: W). **Antioquia**: Río Cabrera, alt. 2500-3000 m, 11 Jan. 1883, *F.C. Lehmann 2346* (G); La Aldea west of Santo Domingo, alt. 2130 m, 10 May 1985, *C. Luer, R. Escobar & E. Valencia 11320* (MO); Rio Negro, along Río Piedras, alt. 2150 m, 29 Apr. 1983, *C. Luer, J. Luer et al. 8865* (MO); Frontino, Alto de Cuevas, alt. 2050 m, 4 May 1983, *C. Luer, J. Luer et al. 8945* (SEL); Palmitas, collected by M. Webb, flowered in cultivation by P. & A. Jesup in Bristol, CT., 26 Apr. 1987, *C. Luer 12891A* (MO);
Cauca: around Popayán, alt. 1600-2000 m, 4 Nov. 1882, *F.C. Lehmann 2104* (G), forests above Popayán, alt. 1700-2200 m, Nov.-Dec. *F.C. Lehmann 8441* (G, K).
ECUADOR: **Carchi**: shrubby vegetation east of pass above Maldonado, alt. 2450 m, 15 Jan. 1992, *C. Luer, J. Luer, P. & A. Jesup 16040* (MO). **Sucumbíos**: between La Bonita and Rosa Florida, alt. 1600-2000 m, 14 Mar. 1996, *S. Dalström, S. Ingram & K. Ferrell-Ingram 2125* (MO, SEL). **Imbabura**: wet forest between Carolina and Buenos Aeres, alt. 1950 m, 17 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C. Dodson, D. Benzing & D. Bermudes 12344* (MO). **Pichincha**: near Maldeuiquí, south slopes of Montaña Mojanda, alt. 3000 m, 3 Feb. 1880, *F.C. Lehmann 525* (G); same area, 28 Jan. 1881, *F.C. Lehmann 308* (BR, G).

This species occurs not infrequently in the Central Cordillera of Colombia where it was likely collected by Consul Lehmann. It is characterized by slender, slightly pusticulate, semiterete leaves borne by slender, elongated ramicauls. The inflorescence is a fascicle of single, long-pedicellate flowers borne successively in congested, few-flowered racemes. All three sepals are shortly but distinctly caudate. The petals are similar to those of *Dryadella simula*, but the surface is cellular-glandular below the lobe on the lower margin. The apex of the lip is broadly rounded, and the column bears a small pair of acute teeth near the apex.

Dryadella minuscula Luer & R.Escobar, Orquideología 13: 43, 1978.

Ety.: From the Latin *minusculus*, "extremely small," in reference to the habit of the plant.

Plant very small, epiphytic, densely caespitose; roots proportionately coarse. Ramicauls erect, ca. 1 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, mottled with purple, thickly coriaceous, semiterete, narrowly ovoid, obtuse, 7-11 mm long, 2-2.5 mm wide, slightly narrowed below to the base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle less than 1 mm long, enclosed by a bract; floral bracts thin, imbricating, 3-4 mm long; pedicel 5 mm long; ovary 1 mm long, trialate; **sepals** translucent greenish, spotted with red-purple, subcarinate, the dorsal sepal ovate, acute, concave, 7 mm long including the tail, 2.5 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the apex contracted into a clavate tail 2 mm long, the lateral sepals ovate, oblique, acute, 5.5 mm long, 2 mm wide, with a transverse callus above the decurved base, connate 0.5 mm at the base; **petals** translucent yellow, spotted with purple, dolabriform, 2 mm long, 2 mm wide, the transverse apex shortly acuminate, with an obtuse angle above and an acute, uncinate angle on the labellar margin; **lip** dark red-purple, long-unguiculate, the blade obovate, 1.5 mm long, 1.25 mm wide, the apex broadly rounded, the base above the claw with a pair of acute, retrorse lobules, the disc with a pair of obtuse calli from the bases of the lobules, the claw 0.8 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** yellow, marked with purple, 2 mm long, longitudinally winged above the middle, the foot 2 mm long.

COLOMBIA: **Antioquia**: Santo Domingo, Porcecito, alt. 800-1000 m, collected by J.M. Serna in March 1985, flowered in cultivation by G. Misas in Medellin, *R. Escobar 1516* (Holotype: JAUM), flowered in cultivation 5 Oct. 1977, *C. Luer 1919* (SEL).

This species is apparently endemic in forests of the northern part of the Central Cordillera of Colombia. The tiny, semiterete leaves are reminiscent of *Dryadella lilliputiana* of southern Brazil, but those of *D. minuscula* are shorter. Both species are characterized by proportionately large, purple-spotted flowers. The sepals of *D. lilliputiana* are narrowly long-caudate; the dorsal sepal of *D. minuscula* is shortly caudate while the laterals are narrowly acute or tailless. The petals of *D. minuscula* are acutely angled.

Dryadella mocoana Luer & R.Escobar, sp. nov.

Ety.: Named for the community of Mocoa in southern Colombia, where the species was collected.

Species haec *D. cuspidatae* Luer & Hirtz similis, sed sepalorum caudis brevioribus, petalorum lobo descendenti truncato, et labelli laminae callis denticulatis differt.

Plant medium in size to large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 5-10 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, the midrib purple, suffused with purple, coriaceous, narrowly linear-obovate, subacute to acute, 4-9.5 cm long, 5-6 mm wide, gradually narrowed below to the base. **Inflorescence** a successively few-flowered raceme borne by a peduncle 5-9 mm long, from low on the ramicaul; floral bracts thin, imbricating, 3-10 mm long; pedicel 5-6 mm long, verrucose; ovary 1-1.5 mm long, tricristate; **sepals** yellow-green, diffusely spotted with purple-brown, subcarinate, the dorsal sepal ovate, subacute, concave, 8 mm long including the thick tail 3 mm long, 4 mm wide, connate to the lateral sepals for 1.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, 8 mm long including the tail 2 mm long, 3 mm wide, connate 0.5 mm at the base, with a transverse callus above the decurved base; **petals** translucent cream with purple markings, suboblong, 2.75 mm long, 2.5 mm wide, the apex broadly obtuse, with a decurved, obliquely truncate lobe on the lower margin; **lip** purple, unguiculate, the blade elliptical, 2 mm long, 2 mm wide, the apex rounded, the base above the claw with a pair of acute, retrorse lobules, the disc with a pair of denticulate lamellae below the middle, the claw broad, 1 mm long, bilobulate at the base, concave, hinged to the apex of the column-foot; **column** green, suffused with purple, 3 mm long, with a pair of descending, triangular wings 1 mm long, near the middle, the foot 3 mm long.

COLOMBIA: **Putumayo**: above Mocoa, alt. 600-800 m, collected by J.M. Serna, Aug. 1977, flowered in cultivation by M. & O. Robledo at La Ceja, 23 July 1978, *C. Luer 2957* (Holotype: SEL).

This species from southernmost Colombia is similar to *Dryadella cuspidata* of southeastern Ecuador. The habit and flowers are superficially similar. It differs from the latter by broader sepals and shorter tails. Instead of a pair of low, smooth calli on the blade of the lip, the pair of calli are taller and denticulate. Instead of a thick triangular process descending from the column, the descending process of *D. mocoana* is short and truncate.

Dryadella nasuta Luer & Hirtz, sp. nov.

Ety.: From the Latin *nasutus*, "with a big nose," referring to the thick tip of the dorsal sepal.

Inter species generis *Dryadellae*, planta perparva caespitosa, foliis crassis linearibus, racemis longipedicellatis folio brevioribus, sepalo dorsali ad apicem crassissimo, sepalis lateralibus brevicaudatis.

Plant small, epiphytic, ascending-caespitose; roots fleshy. Ramicauls erect, 3-8 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly linear-elliptic, obtuse, 10-25 mm long, 3-4 mm wide, narrowed below to the base. **Inflorescence** 2-3 erect, successively several-flowered racemes to 15 mm long, including the peduncle 2-4 mm long, from low on the ramicaul; floral bracts thin, 2-3 mm long, pedicels 2-6 mm long; ovary 0.5-1.5 mm long, trialate; **sepals** light yellow, orange toward the base, the dorsal sepal elliptical, concave, 4 mm long, 2.75 mm wide unexpanded, 3-veined, the apex contracted into a thick, 1-mm-long tail, shallowly connate to the lateral sepals into a sepaline cup, the lateral sepals ovate, oblique, obtuse, 3.5 mm long, 1.5 mm wide, connate 0.5 mm at the base, with a transverse callus above the decurved base, the apex contracted into a tail 1 mm long; **petals** orange, hastate-subquadrate, 1.3 mm long, 1.3 mm wide, the apex broadly obtuse, with an obtuse, rounded angle on both margins; **lip** unguiculate, the blade obovate, 1 mm long, 1 mm wide, the apex broadly rounded, decurved, the base above the claw with a pair of acute, retrorse angles, the disc with a pair of low, oblique lamellae below the middle, the claw 0.75 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** 1.25 mm long, longitudinally winged on the distal half with a pair of acute teeth at the apex, the foot thick, equally long.

ECUADOR: **Morona-Santiago**: El Pangui, collected and cultivated by Ecuagenera, Gualaceo, 2 May 2004, *A. Hirtz 8738* (Holotype: MO; Isotype: QCNE); Gualaquiza, alt. 800 m, cultivated at Ecuagenera, June 2004, *A. Hirtz 8803, 8926* (MO).

This little species is known only from southeastern Ecuador. Among all the other species of the genus, it is most similar to *Dryadella lueriana* from Cerro Guaiquini in Venezuela. *Dryadella nasuta* is distinguished by the small, caespitose habit; thick, narrow leaves, and small, yellow, unspotted flowers borne successively in a conspicuously long-pedicellate raceme that is about half as long as the leaf. The sepals terminate in short, thick tails.

Dryadella nortonii Luer, sp. nov.

Ety.: Named for Darrin Norton of Mountain Orchids, Ludlow, VT, USA, who cultivates this species.

Inter species generis *Dryadellae* planta parva, foliis crassissimis, sepalis lateralibus triangularibus acutis, petalis dolabriformibus, columna late alata distinguitur.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-3 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, ellipsoid, subacute to obtuse, 12-20 mm long, 3.5-4.5 mm wide, 2-2.5 mm thick, cuneate below into the sessile base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 2-3 mm long, from low on the ramicaul; floral bracts thin, imbricating, 4 mm long; pedicel 4-5 mm long; ovary 1.5 mm long, trialate; **sepals** fleshy, greenish, spotted with purple, the dorsal sepal ovate, concave, contracted in the distal third into a thick tail-like apex, 7.5 mm long, 3.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals triangular, oblique, acute, 7 mm long, 2.5 mm wide, 3-veined, barely connate, with a transverse callus above the decurved base; **petals** translucent, spotted with purple, dolabriform, angled on both sides below the obtuse tip, 2.25 mm long, 2 mm wide, 2-veined; **lip** green, unguiculate, the blade elliptical-obovate, acutely deflexed near the middle, 2 mm long expanded, 1.75 mm wide, the apex broadly rounded, entire, the base above the claw with a pair of small, short angles, the disc with a pair of low lamellae below the middle, the claw 1 mm long, bilobulate at the base, hinged to the apex of the column-foot; **column** green, 2 mm long, obtusely winged from below the middle, the foot 2.5 mm long.

BOLIVIA: Without collection data, cultivated by Daryl Norton, 1996, *C. Luer 17811* (Holotype: MO).

This very small species with thickly coriaceous leaves is similar vegetatively to *Dryadella lilliputiana* as well as other very small species of the genus. However, this species is distinguished by fleshy, triangular sepals that are acute without tails. The petals of the two species do not differ significantly. The calli on the blade of the lip are low and rounded in *D. nortonii*, instead of erect and acute or subacute.

Dryadella odontostele Luer, Lindleyana 11: 54, 1996.

Ety.: From the Greek *odontostele*, "a toothed column," referring to the long-toothed column.

Plant small, epiphytic, densely caespitose; roots slender but proportionately coarse. Ramicauls erect, 3-7 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical-obovate, subacute, 10-25 mm long, 3-3.5 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle 1 mm long, enclosed by a sheath, from low on the ramicaul; floral bract thin, 2 mm long; pedicel 3-5 mm long; ovary 1 mm long, trialate; **sepals** translucent pale green, sometimes lightly spotted with rose, the dorsal sepal ovate, concave, 3.5-4 mm long, 2-2.5 mm wide expanded, the apex obtuse, shortly acuminate, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, 3 mm long, 2 mm wide, the apex obtuse, shortly acuminate, with a transverse callus above the decurved base; **petals** translucent yellow-green with red midvein, subsagittate, the apex obtuse with an obtuse angle on the upper margin and an acute or subacute angle on the labellar margin, 1.5 mm long, 1.25 mm wide; **lip** green, suffused with purple, long-unguiculate, the blade elliptical, 1.25 mm long, 1 mm wide, the apex broadly rounded, slightly decurved, the base above the claw with a pair of acute, retrorse angles, the disc shallowly sulcate, the claw thick, 0.75 mm long, bilobulate at the base, hinged to the apex of the column-foot; **column** green, suffused with rose, slender, 1.5 mm long, with a conspicuous pair of acute, descending, toothlike processes below the apex, the foot 0.5 mm long.

PANAMA: **Panamá**: Cerro Jefe, epiphytic, alt. 1000 ca. m, 22 Sept. 1972, *A. Gentry 6178* (Holotype: MO); same area, alt. ca. 800 m, 29 Sept. 1977, *J.P. Folsom, R.L. Dressler & W. Rauh 5662-z* (MO); same area, epiphytic, alt. 900 m, 22 Nov. 1980, *K. Sytsma & T. Antonio 2338* (MO); same area, Río Utive, alt. ca. 900 m, 13 Sept. 1981, *S. Knapp 1198* (MO); in humid forest along the Alto de Pacora road, alt. ca. 300 m, C. Luer, J. Luer, P. Taylor & R. Dressler, 5 Mar. 1976, flowered in cultivation 26 June 1976, *C. Luer 996* (SEL). Without locality, collected by Tineke Mulder, flowered in cultivation at Wageningen, Holland, 4 Sept. 1987, *C. Luer 12940* (MO).
COSTA RICA: **Heredia**: Puerto Viejo de Sarapiquí, alt. 50-150 m, Oct. 1979, *C. Todzia 828, 841* (CR, MO).
COLOMBIA: **Chocó**: Bahia Solano, without further collection data, flowered in cultivation by M. & O. Robledo at La Ceja, 30 Sept. 1977, *C. Luer 1874* (SEL); Río Ura, alt. 50-100 m, collected by H.-G. Seeger, Sept. 1986, flowered in cultivation at the Botanischer Garten Heidelberg, 1 Sept. 1987, *C. Luer 12905* (MO). **Nariño**: near Popayán, Uribe, alt. 3200 m, flowered in cultivation by M. & O. Robledo at La Ceja, 14 Oct. 1977, *C. Luer 2023* (SEL).

Previously identified as the large, Andean *Dryadella simula*, this small species is found relatively frequently from Costa Rica into Colombia. It is characterized by the habit only seven millimeters high; very small, clear-green flowers; shortly acuminate, obtuse sepals; hastate petals; a featureless oblong-rounded blade of the lip; and a slender column with a conspicuous pair of acute, descending fanglike processes just below the apex.

Dryadella osmariniana (Braga) Garay & Dunst. Orchid. Venez. Ill. Field Guide 172, 1979, [probably = **D. guatemalensis**].

Ety.: Named for Osmarino Pires Monteiro, who collected this species,
Bas.: *Masdevallia osmariniana* Braga, Acta Amazon. 7: 333, 1978.

Plant small to medium in size for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-5 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, narrowly linear-obovate, narrowly obtuse, 1.5-4.5 cm long, 2-2.5 mm wide, gradually attenuated below to the base. **Inflorescence** a solitary flower borne by an abbreviated peduncle from the ramicaul, floral bracts and pedicels unknown; ovary 1 mm long, trialate; flowers yellow-green; **sepals** glabrous, cellular-granular, the dorsal sepal ovate, subacute, concave, 7 mm long including a 2 mm long tail, 2 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate-falcate, oblique, with a transverse callus above the base, 5-6 mm long, 3 mm wide, the apex acute, contracted into a tail ca. 1 mm long; **petals** irregularly rhombiform, the apex obtuse, with an rounded lobule on the labellar margin below the apex, with a broadly obtuse angle on the opposite margin; 2.2 mm long, 2 mm wide, 2-veined; **lip** orange, long-unguiculate, the blade obovate, the apex rounded, irregularly denticulate, 1.5 mm long, 0.5 mm wide, the disc with a pair of low calli below the middle, the base above the claw with a pair of retrorse lobules, the claw 1.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot, total length of the lip 3 mm; **column** semiterete, 1.5 mm long, longitudinally winged at the apex, the foot 1 mm long.

BRAZIL: **Amazonas**: between Manaus and Itacoatiara, Apr. 1976, *O.P. Montiero & J. Ramos 675* (Holotype: INPA).

With long, narrowly linear leaves, this species, found in the middle of the Amazon basin near Manaus, seems indistinguishable from Central American *Dryadella guatemalensis*, and is referred here to *D. guatemalensis* No material has been seen. The above description was made from the published sketches and description, but further investigation is warrented. The illustration identified as *D. osmariana* in the Field Guide of *Venezuelan Orchids Illustrated* is *D. lueriana*.

Dryadella pachyrhiza Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 163, 1999.

Ety.: From the Greek *pachyrhiza*, "a thick root," referring to the fleshy roots.

Dryadella acuminata Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 159, 1999.

Ety.: From the Latin *acuminatus*, "acuminate," referring to the apices of the sepals.

Plant small to medium in size for the genus, epiphytic, densely caespitose; roots fleshy, very thick. Ramicauls erect, 2-10 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, more or less suffused with purple, narrowly linear, semiterete, acute, 2-6 cm long, 2-2.5 mm thick, gradually nar-

rowed below to the subpetiolate base. **Inflorescence** a solitary flower borne singly by a peduncle 4-6 mm long, enclosed by a sheath, from low on the ramicaul; floral bract thin, 6-7 mm long; pedicel 6-8 mm long; ovary 1-1.5 mm long, trialate; **sepals** cream-colored or light green, diffusely dotted with purple or brown, the dorsal sepal ovate, concave, 10-11 mm long including the tail, 4-5 mm wide expanded, the apex obtuse, contracted into a thick tail 4-5 mm long, connate to the lateral sepals for 1-2 mm to form a sepaline cup, the lateral sepals ovate, oblique, with the margins cellular-erose, 9 mm long including the tail, 2.5-3 mm wide, the apex acute, contracted into a tail ca. 4 mm long, barely connate at the base, with a transverse callus above the decurved base; **petals** translucent green or brown, subquadrate, sagittate, 1.5-2 mm long, 1.5-2 mm wide, the apex obtuse, obtusely or subacutely angled on both margins below the apex; **lip** light brown, long-unguiculate, the blade subovate, the rounded apex reflexed, 1.5-2.5 mm long, 1.5-2.5 mm wide, the disc with a pair of low, rounded calli below the middle, the base above the claw with a pair of acute lobules directed posteriorly, the claw 1-1.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, 2 mm long, longitudinally winged above the middle, the foot equally long.

ECUADOR: **Bolívar**: epiphytic in humid forest west of Guaranda, old road to Puertoviejo alt. 3100 m, 26 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9742* (Holotype: MO); same area, alt. 2700 m, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9741* (MO); old road between Guaranda and Caluma, alt. 1600, 2800 m, *C. Luer & S. Dalström 7247, 7267* (SEL); cloud forest west of Guaranda toward Balzapamba, alt. 2000 m, 26 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9737* (holotype of *D. acuminata*: MO).

This little species occurs at high altitudes of the western Andes of central Ecuador. It is distinguished from the frequent Andean *Dryadella simula* by the thick, fleshy roots; narrowly linear, semiterete leaves; and smaller flowers. All three sepals are acuminate-caudate, with slender tails as long as the blades. The petals are more or less sagittate and obtuse at the apex with angles on both margins below the apex. The characteristic lobule below the apex of the petal of *D. simula* is not present in *D. pachyrhiza*. A pair of lunate calli are present below the middle of the blade of the lip.

Dryadella perpusilla (Kraenzl.) Luer, Selbyana 2: 209, 1978.

Bas.: *Masdevallia perpusilla* Kraenzl., Repert. Spec. Nov. Regni. Veg. 1: 179, 1906.

Ety.: From the Latin *perpusillus*, "very small," in reference to the size of the plant.

Plant very small, densely caespitose. Ramicauls 3 mm long. **Leaf** thickly coriaceous, linear-oblong, obtuse, carinate, 2-2.3 cm long, hardly 3 mm wide, gradually narrowed below to the base. **Inflorescence** a dense, successively flowered raceme hardly 1 cm tall among the leaves, with translucent, ovate, acute sheaths; **sepals** dark purplish brown, the dorsal sepal cucullate, acuminate, with the apex inflexed, 3.5 mm long, free from the lateral sepals, the lateral sepals 2.5 mm long, with the apices reflexed, 1.5 mm wide at the base, with a minute mentum; **petals** much smaller, obliquely rhombic, obtusely acute; **lip** with a linear foot articulated with the column, erect in the flower, with the apex sulcate, reflexed; **column** with membranous margins.

PERU: **Junín**: Tarma, near La Merced in the Chanchamayo Valley in light forest, alt. 800-1000 m, *A. Weberbauer 1015* (Holotype presumably destroyed at B).

This species is poorly known, the holotype has been destroyed, and no isotype is known. The inadequate description above was made from Kränzlin's original publication. Schweinfurth's elaboration in *Orchids of Peru* has been modified from a different collection. The other collection cited by Schweinfurth is from an altitude of 3200 meters; the type was collected below 1000 meters altitude. Very few Andean species have sepals less than five millimeters long, raising the possibility of this species being a *Platystele*. For the present, it will be excluded from the genus *Dryadella*.

Dryadella pusiola (Rchb.f.) Luer, Selbyana 2: 209. 1978.

Bas.: *Masdevallia pusiola* Rchb.f., Gard. Chron. 1: 140, 1887.
Ety.: From the Latin *pusiolus*, "very small," referring to the habit of the plant.

Syn.: *Masdevallia simulatrix* Kraenzl., Kew Bull. 102, 1925.
Ety.: Named for the presumed similarity of the species to *M. simula* Rchb.f.

Syn.: *Masdevallia dolichopoda* Luer, Phytologia 39: 196, 1978.
Ety.: From the Greek *dolichopodion*, "a long foot," in reference to the long pedicels.

Syn.: *Dryadella dolichopoda* (Luer) Luer, Selbyana 2: 208, 1978.
Syn.: *Dryadella simulatrix* (Kraenzl.) Luer, Selbyana 2: 209, 1978.

Plant small, epiphytic, densely caespitose; roots thick. Ramicauls erect, 3-8 mm long, enclosed by 2-3 thin, imbricating, tubular sheaths. **Leaf** erect, narrowly linear-elliptical to semiterete, more or less verruculose, subacute, 1.5-3 cm long, 2-2.5 mm wide, gradually narrowed below to the subsessile base. **Inflorescence** a loose, long-pedicellate, successively few-flowered raceme, borne by a slender, erect peduncle 5-10 mm long, with a bract at the base, from low on the ramicaul; floral bracts thin, deciduous, 3-6 mm long; pedicel verruculose, 10-17 mm long; ovary minutely verruculose, 1-1.5 mm long; **sepals** pale yellow-green to white, the dorsal sepal broadly ovate, obtuse, acuminate, concave, 5-6 mm long, 4 mm wide, total 6-8 mm long including a tail 2-3 mm long, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals narrowly ovate, oblique, acuminate, acute, 5-6 mm long including the tail, 1.5-2 mm wide, with a transverse callus above the decurved base, connate 1 mm at the base to form a small mentum, the margins microscopically erose; **petals** translucent light yellow-green, oblong-hastate, obtuse, acuminate, with a marginal angle on both margins below the apex, 1.5-1.75 mm long, 0.75-1.25 mm wide; **lip** pale yellow-green, long-unguiculate, the blade elliptical-ovate, 1.5-2 mm long, 1.25-1.5 mm wide, the apex rounded, the base above the claw with a pair of acute, retrorse lobules on the same plane as the blade, the disc with a pair of low, rounded lamellae converging from the lobules, the claw 1-1.25 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, 1.5 mm long, winged above the middle with an acute, descending angle at the base of the wing, the foot 2 mm long.

COLOMBIA: Without collection data, imported by F. Sander, obtained by Wendland, flowered in cultivation at Herrenhausen, Germany, 1886, by *H. Wendland 85* (Holotype: W), C. Luer illustr. 18564.
ECUADOR: **Pichincha**: above Chiriboga, alt. 2600 m, collected by B. Malo, flowered in cultivation at Tarqui near Cuenca, 16 July 1977, *C. Luer 1714* (holotype of *M. dolichopoda*: SEL). **Bolívar**: near Guaranda, cultivated at Ecuagenera, Gualaceo, Apr. 2001, *A. Hirtz 7559* (MO). **Loja**: epiphytic in cloud forest remnant along the new road between Santa Rosa and Loja, alt. 2000 m, 20 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10689* (MO). **El Oro**: forests of Mauril above Sisne and Zaruma, alt. 2300-2600 m, *F.C. Lehmann 7007* (holotype of *M. simulatrix*: K).

Dryadella pusiola was described from a plant cultivated at Herrenhausen in Hannover by H. Wendland, who had obtained it from F. Sander & Co., reportedly from Colombia. It is distinguished by its comparatively thick roots and narrowly linear, slightly pusticulate leaves. The flowers are produced successively in lax racemes with elongated pedicels with the flowers held half the length to nearly as long as the leaf. The peduncles and pedicels are microscopically verrucose. The flowers are pale yellow-green or white; the proportionately large dorsal sepal is concave, larger and broader than the lateral sepals together; the petals are small with marginal angles below the tip; the blade of the lip is elliptical with a pair of acute, retrorse, basal lobes on the same plane as the blade, where the pair of calli are very low; the column is slender with a pair of acute, descending teeth; and the column-foot is longer than the column itself.

Kränzlin (Kew Bull. 102, 1925) states that the leaves of Lehmann's holotype collection described as *Masdevallia simulatrix* are "ad 5 cm. longa, vix 1 cm. lata," but this is undoubtedly a typographical error. The dried leaves of the type-specimen are indeed "barely 1 mm. wide." A rehydrated flower reveals that the apex of the lip is obtuse, not as acute as a "spear-point" as described by Kränzlin.

Dryadella rodrigoi Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 163, 1999.

Ety.: Named in honor of Rodrigo Escobar R. of Medellín, Colombia.

Plant small, epiphytic, densely caespitose; roots slender but proportionately thick. Ramicauls erect, 8-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, narrowly linear, semiterete, acute, 3-4 cm long, 2 mm wide, 2 mm thick, the base epetiolate. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 2-4 mm long, enclosed by a sheath, from near the middle of the ramicaul; floral bracts thin, imbricating, 5 mm long; pedicel 10-11 mm long; ovary 1-1.5 mm long, subverrucose; **sepals** translucent yellow, diffusely spotted with purple, the dorsal sepal broadly ovate to suborbicular, 6 mm long, 4 mm wide, the apex obtuse, shortly acuminate into a tail 1.5 mm long, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals broadly ovate, oblique, 4.5 mm long, 2.75 mm wide, the apex obtuse, shortly acuminate into a tail 1.5 mm long, with a transverse callus above the deflexed base; **petals** translucent with a few purple spots, obliquely subsagittate, 2 mm long, 1.25 mm wide at the base, the apex acute with an obtuse angle on the upper margin and an acute apiculum on the labellar margin; **lip** dull yellow, spotted and suffused with purple, long-unguiculate, the blade suborbicular, 2.5 mm long, 2.5 mm wide, acutely deflexed near the middle, the apex rounded, minutely denticulate, the base above the claw with a pair of short, retrorse angles, the disc shallowly sulcate, the claw slender, 1.5 mm long, bilobulate at the base, hinged to the apex of the column-foot; **column** greenish white, slightly spotted with rose, slender, 2.5 mm long, winged above the middle, the foot slender, 3 mm long.

COLOMBIA: **Cauca**: Enana, Popayán, collected by Rodrigo Escobar 1396, flowered in cultivation by M. & O. Robledo at La Ceja, 5 Oct. 1977, *C. Luer 1920* (Holotype: SEL).

This small species is identified by the very narrowly semiterete leaves, and broadly ovate, obtuse sepals with tails about one millimeter long. Most distinctive are the oblique, narrowly acute petals, obtusely angled on the upper margin, and with a short, acute apiculum on the labellar margin. Also unusual in *Dryadella* is the long, narrow column and even longer column-foot.

Dryadella simula (Rchb.f.) Luer, Selbyana 2: 209, 1978.

Bas.: *Masdevallia simula* Rchb.f., Gard. Chron. 1: 8, 1875.

Ety.: From the Latin *simulus*, "with a little pugnose," in fancied allusion to the appearance of the flower.

Syn.: *Masdevallia popayanensis* F.Lehm. & Kraenzl., Repert. Spec. Nov. Regni Veg. 17: 416, 1921.

Ety.: Named for the town of Popayán, near where the species was collected.

Syn.: *Dryadella popayanensis* (F.Lehm. & Kraenzl.) Luer, Selbyana 2: 209, 1978.

Plant medium in size for the genus, epiphytic, densely caespitose to ascending; roots coarse. Ramicauls erect, 8-25 mm long, partially enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, sometimes slightly pusticular, narrowly elliptical-obovate, acute to subacute, 20-80 mm long, 3-7 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle ca. 1-5 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 5-10 mm long; pedicel 8-15 mm long; ovary 2-3 mm long, trialate; **sepals** greenish, diffusely marked with purple, often in transverse bars, the dorsal sepal ovate, concave, subacute to obtuse, shortly acuminate, 8-11 mm long, 5-6 mm wide, connate to the lateral sepals for 1-2 mm to form a sepaline cup, the lateral sepals ovate, oblique, more or less pusticulate, 6-8 mm long, 3.5-5 mm wide, the apex subacute to obtuse, more or less shortly acuminate into a tail 1-2 mm long, barely connate at the base, with a transverse callus above the decurved base; **petals** translucent, marked with red, brown or purple, subquadrate, 2-2.5 mm long, 2-2.5 mm wide, 2-veined, the apex obliquely truncate between obtuse angles at the apex and on the dorsal margin, with a descending lobule on the labellar margin above the middle, the margin thickened between the lobule and the base; **lip** greenish, heavily suffused with dark purple, long-unguiculate, the blade subquadrate, the sides and apex reflexed, 3-3.5 mm long, 3 mm wide, the apex broadly rounded, microscopically denticulate, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low rounded pair of diverging calli from the claw, the claw 1 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with purple, 3-4 mm long, longitudinally winged in the distal two-thirds, the foot equally long.

COLOMBIA: without locality, collected by Chesterton in 1874, flowered in cultivation in the Royal Exotic Nursery of Messrs. Veitch, *Veitch 342* (Holotype: W). **Antioquia**: Alto del Cardal between Caldas and Fredonia, alt. 1600-2000 m, *F.C. Lehmann 7044* K); Cerro Padre Amaya, alt. 2500 m, 16 Jan. 1979, *C. Luer, J. Luer & R. Escobar 3701* (SEL); Dabeiba, Choromando, collected by H. Angarita,

flowered in cultivation by M. & O. Robledo at La Ceja, 19 Mar. 1989, *C. Luer 14296* (MO); La Ceja, near abandoned copper mine above La Ceja, alt. 2400 m, *C. Luer, J. Luer, R. Escobar, M. & O. Robledo & W. Teague 13192* (MO); Sonsón, Tres Cruces, alt. 2500 m, collected in 1983 by M. Webb, R. Escobar, J. & C. Luer, flowered in cultivation by P. & A. Jesup, 10 Dec. 1988, *C. Luer 13803* (MO); Cerro Padre Amaya, alt. 2800 m, 22 Apr. 1983, *C. Luer, J. Luer R. Escobar et al. 8766* (SEL); Río Palace, Carreterra Tierradentro, flowered in cultivation at Colomborquídeas, 22 Nov. 1981, *C. Luer 6758* (SEL). **Boyacá**: Duitama, Páramo de la Rusia, alt. 3550 m, 21 Nov. 1994, *F. Alonso, et al. 12104* (COL, MO). **Risaralda**: San Clemente, alt. 1800 m, collected by C. Luer, J. Luer & R. Escobar, flowered in cultivation by M. & O. Robledo at La Ceja, 22 Nov. 1981, *C. Luer 6759* (SEL). **Cauca**: forests above Popayán, alt. 1600-2200 m, Oct. - Nov. 1901, *F.C. Lehmann B.T. 184* (lectotype of *M. popayanensis*: AMES, as *M. galeopsis* in ed., isolectotypes: G, K, NY, RJ, W), C. Luer illustr. 20821.

ECUADOR: **Pichincha**: Paramo de Mojanda, alt. 3000 m, 3 Feb. 1880, *F.C. Lehmann 525* (W); same area, 28 Jan. 1881, *F.C. Lehmann 308* (W). **Chimborazo**: Pallatonga, alt. 2800 m, collected by A. Hirtz, flowered in cultivation 30 Apr. 1981, *C. Luer 6029* (SEL). **Morona-Santiago**: Valle del Paute, alt. ca. 2200 m, collected by M. Portilla, flowered in cultivation at Hostería Uzhupud, 28 May 1988, *C. Luer 13676* (MO). **Loja**: dry forest, Cajanuma, 16 Dec. 1982, *S. Dalström 360* (SEL); cloud forest above Jimbura, alt. 2600 m, 21 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11984* (MO).

PERU: **Piura**: Ayabaca, Randrahauca, toward Laguna Prieta, alt. 3100-3400 m, 15 Nov. 1992, *D. Bennett & J. Campoverde 5841* (MO). Without locality, OIC 0849, flowered in cultivation 28 Mar. 1977, *C. Luer 500D* (SEL).

This species was first collected in 1874 somewhere in Colombia by the professional collector Chesterton in the employ of Messrs. Veitch of Chelsea. When in flower, specimens were forwarded to Professor Reichenbach in Hamburg. Several very adequate, detailed drawings obviously made from living flowers are included on the herbarium sheet now at W (Vienna).

Consul Lehmann, quoted by Florence Woolward in her monograph on the genus *Masdevallia* in 1896, states that he has seen numerous forms of what he thought were this species in Colombia and Ecuador. However, he had "some doubt as to whether all the different varieties belong to the same species." He noted that plants that grow at high altitudes have shorter, thicker leaves.

Dryadella simula is frequent in Colombia and Ecuador, and occasional in Peru. Populations vary somewhat in most morphological features, and plants are basically similar, but easily identified with an eight-power loupe. Most Central American collections have been identified as *D. simula*, a larger species from higher altitudes in the Andes. No collection of *D. simula* from Mesoamerica is known.

Dryadella simula is identified by the medium-sized habit of densely caespitose narrow leaves with relatively large flowers nestled within the clusters near the bases of the leaves. The leaves usually are very narrow when dry. The sepals are greenish and marked with purplish spots, often arranged in bars. The dorsal sepal is acute at the apex while the lateral sepals, more or less pusticulate, often terminate in very short tails. The characteristic petals are obliquely truncate at the apex with a prominent, descending lobule on the labellar margin below the apex. Lehmann's collection described as *M. popayanensis* is alike in all respects, except that the petals are single-veined with the lobule on the lower margin of the petals absent.

Dryadella sororcula Luer, Lindleyana 11: 56, 1996.

Ety.: From the Latin *sororcula*, "a little sister," referring to the similarity to the larger *D. simula*.

Plant small in size for the genus, epiphytic, densely caespitose; roots slender but proportionately coarse. Ramicauls erect, 1-2 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, subacute to obtuse, 8-15 mm long, 3-4 mm wide, narrowed below at the subpetiolate base. **Inflorescence** a solitary flower borne successively in a congested raceme 2-3 mm long by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 2 mm long; pedicel 1.5 mm long; ovary 0.75 mm long, trialate; **sepals** greenish, diffusely dotted with purple, often in transverse bars, the dorsal sepal ovate, concave, obtuse, contracted into a short, more or less thickened tail, 3.5-4 mm long including the tail ca. 1 mm long, 2.25 mm wide, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, 3 mm long,

2 mm wide, the apex obtuse, shortly acuminate into a tail 1 mm long, barely connate at the base, with a transverse callus above the decurved base; **petals** translucent, marked with purple, subquadrate, sagittate, 1.5 mm long, 1.5 mm wide, the apex obtuse, obtusely or subacutely angled on both margins below the apex; **lip** brown, long-unguiculate, the blade obovate, the sides and apex deflexed, 1.5 mm long, 1.5 mm wide, the apex broadly rounded, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a low rounded pair of calli from the claw flanking a central sulcus, the claw 0.5 mm long, bilobulate at the base, channeled longitudinally, hinged to the apex of the column-foot; **column** green, marked with purple, 1.5 mm long, broadly winged in the distal half, the foot equally long.

PANAMA: **Bocas del Toro**: epiphytic in tall, wet forest between Fortuna and Chiriquí Grande, alt. 350 m, 17 Feb. 1985, *C. Luer, J. Luer, R. Dressler & K. Dressler 10606* (Holotype: MO). **Chiriquí**: Fortuna dam site, alt. ca. 1000 m, collected 1977, flowered in cultivation 1978, *C. Luer 2237* (SEL).

This tiny species is apparently rare in westernmost Panama. From the other tiny Central American species of the genus, *Dryadella sororucla* is distinguished by an even smaller habit with smaller flowers with, shorter, thicker tails. The blade of the lip is channeled between a usual pair of calli, but these calli are low and rounded. The column is broadly winged above the middle.

Dryadella sublata Luer & J.J.Portilla, sp. nov.

Ety.: From the Latin *sublatus*, "raised," referring to the elevated flowers.

Species haec *D. simulae* (Rchb.f.) Luer affinis, sed habitu minore foliis crassisimis, pedicello uniflorо proportione longissimo, sepalis carnosis ad apicem crassisimis differt.

Plant small, epiphytic, densely caespitose; roots proportionately thick. Ramicauls erect, 4-8 mm long, enclosed by 2-3 thin, loose, ribbed, tubular sheaths. **Leaf** erect, thickly coriaceous, ellipsoid, subacute to obtuse, 12-17 mm long, 4 mm wide, 2 mm thick, cuneate below into the sessile base. **Inflorescence** a single flower borne by a pedicel 8-11 mm long, from near the middle of the ramicaul; floral bract thin, loose, tubular, 3-5 mm long; peduncle 2-4 mm long, enclosed by 2-3 loose, ribbed, tubular sheaths; ovary costate, 2 mm long, 2.5 mm wide; **sepals** green, heavily dotted with purple, fleshy, thickened toward the apex, subcarinate, the dorsal sepal ovate, narrowly obtuse, concave, 8.5 mm long, 5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, narrowly obtuse, 8.5 mm long, 3 mm wide, 3-veined, connate 0.5 mm at the base, with a transverse callus above the decurved base; **petals** translucent purple, suboblong-hastate, 2 mm long, 2.5 mm wide, 2-veined, slightly thickened on the labellar half, the apex broadly obtuse, both margins with a subacute angle above the middle; **lip** dark purple, unguiculate, the blade obovate, acutely deflexed near the middle, 2 mm long expanded, 2 mm wide, the apex rounded, the base above the claw with a pair of obtuse, retrorse, subacute, angles, the disc with a pair of obtuse shortly denticulate lamellae below the middle, the claw channeled, 1 mm long, minutely bilobulate at the base, hinged to the apex of the column-foot; **column** green, 2 mm long, with an equally long foot, denticulate on narrow wings from below the middle.

PERU: **Amazonas** : Mendoza, cultivated at Ecuagenera, Gualaceo, Ecuador, 5 May 2001, *C. Luer 19743* (Holotype: MO).

This small, densely caespitose species is distinguished by a proportionately long pedicel that bears a single, spotted flower about as high as the tips of thickly coriaceous leaves. The sepals are fleshy, more or less triangular and slightly contracted above the middle into thick, tail-like apices. The angled petals and unguiculate lip are not distinctly different from many of its relatives.

Dryadella summersii (L.O.Williams) Luer, Selbyana 2: 209. 1978.

Bas.: *Masdevallia summersii* L.O.Williams, Bot. Mus. Leafl. 9: 5, 1940.

Ety.: Named in honor of R.W. Summers, co-discoverer of the species.

Plant small to medium in size, epiphytic, densely caespitose; roots slender but proportionately coarse. Ramicauls erect, 15-25 mm long, partly enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, acute to subacute, 2.5-5 cm long, 4-5 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower borne successively in a congested raceme by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 5 mm long; pedicel 5 mm long; ovary 1.5 mm long, subverrucose, trialate; **sepals** translucent yellow-green, diffusely spotted with purple, often in small, transverse bars, the dorsal sepal ovate, concave, 6 mm long, 4.5 mm wide expanded, the apex obtuse, contracted into a tail 4 mm long, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, 5 mm long, 2 mm wide, the apex acute, acuminate into a tail about 3 mm long, barely connate at the base,

with a transverse callus above the decurved base; **petals** translucent, marked with purple, subquadrate, the apex obliquely truncate with a subacute lobule on the labellar margin of the apex, 2.25 mm long, 1.5 mm wide, **lip** heavily blotched with purple, long-unguiculate, the blade elliptical, convex, 2.5 mm long, 2 mm wide, the apex broadly rounded, the base above the claw with a pair of obtuse angles, the disc essentially featureless, the claw laterally compressed, 1 mm long, bilobulate at the base, hinged to the apex of the column-foot; **column** yellow-white, marked with purple, 2.5 mm long, with a pair of acute, descending, toothlike processes near the middle, the foot 2 mm long.

ECUADOR. **Imbabura**: epiphytic near Lake Cuicocha, alt. 3300 m, 2 June 1939, *C.W. Penland & R.H. Summers 837* (Holotype: AMES); epiphytic in scrub vegetation west of Otavalo, alt. 3200 m, 17 Feb. 1978, *C. Luer, J. Luer, & A. Hirtz 2608* (SEL).

This species is very closely related to the frequent *Dryadella simula*. It is known from only one area at an altitude over 3000 meters above sea level in northwestern Ecuador. Vegetatively and florally, the two species appear similar. The petals are also of the same shape. *Dryadella summersii* is distinguished by the caudate dorsal sepal; an elliptical, convex blade of the lip essentially without calli, and with a laterally compressed claw; and a pair of sharp teeth descending from the middle of the column.

Dryadella susanae (Pabst) Luer, Selbyana 2: 371, 1978.

Bas.: *Masdevallia susanae* Pabst, Bradea 2: 68, 1976.

Ety.: Named in honor of Susana Ferreira de Mello in whose care the species flowered.

Plant small, epiphytic, shortly repent, forming dense clumps; roots slender. Ramicauls suberect, 1 mm long, enclosed by 2 thin, loose, ribbed sheaths. **Leaf** erect to suberect, thickly coriaceous, elliptical, obtuse, 4-6 mm long, 2.5-3 mm wide, 1.5 mm thick, contracted below to the sessile base. **Inflorescence** a solitary flower apparently borne singly by a peduncle 1 mm long, enclosed by a loose sheath, floral bracts thin, imbricating, 2 mm long; pedicel thick, 2 mm long with a rudimentary filament; ovary 1 mm long, trialate; **sepals** dark red, the dorsal sepal triangular-ovate, concave, 4 mm long, 2 mm wide, with the 3 veins thickened externally, the apex acute, thickened, connate below to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals ovate, oblique, 3.5 mm long, 2 mm wide, barely connate at the base, with a low, transverse callus above the decurved base, the margins prominently cellular, the obtuse apices are contracted into acute tails ca. 1 mm long; **petals** erect, more or less oblong, 1.5 mm long, 1.5 mm wide, 2-veined, the apex transversely obtuse between subacute marginal angles above a central narrowing; **lip** unguiculate, the blade thick, obovate, 1.5 mm long, 1.4 mm wide, the apex rounded, the base above the claw with a pair of acute, retrorse angles, the disc with a pair of small, obtuse, mammillate calli below the middle, the claw 0.75 mm long, bilobulate at the base, deeply channeled longitudinally, hinged to the apex of the column-foot; **column** semiterete, 1.5 mm long, bidentate and longitudinally erose-winged on the distal half, the foot equally long.

BRAZIL: **Espírito Santo**: Mun. Conceição do Castelo, Ribeirão do Meio, Km 123 route 262, alt. 1000 m, collected by R. Kautsky 459, flowered in cultivation Jan. 1975 by *S. Ferriera de Mello MAS-7-A* (Holotype: HB, lost); same area, Km 64 route 262, alt. ca. 800 m, flowered in cultivation at Domingos Martins, 31 Jan. 1983, *R. Kautsky s.n.* (MO), C. Luer illustr. 18410.

This minute species from the forests of Espírito Santo is rare and not in cultivation. It was collected by Roberto Kautsky, probably in 1974, having flowered in January 1975 by Susana Ferreira de Mello. The accompanying illustration was made from pickled material made by Kautsky from a locality near that of the original collection.

Vegetatively, *Dryadella susanae* is unique in the genus. The very small, thick, suberect, elliptical leaves overlap in dense mats. The small, red flowers are produced singly by short pedicels, but they do not differ from the basic pattern seen in the genus. The triangular dorsal sepal is concave with the acute apex thickened. The lateral sepals are obtuse but contracted into short, acute, triangular tails. The petals are narrowed below marginal angles of the more or less transverse apex. The blade of the lip is obovate with a pair of acute, retrorse processes at the base.

Dryadella toscanoi Luer, sp. nov.

Ety.: Named in honor of Dr. Antonio Toscano de Brito who collected this species.

Species haec *D. edwallii* (Cogn.) Luer similis, sed habitu majore, foliis latioribus et petalorum lobo inferiore grandi et rotundo differt.

Plant large for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 10-12 mm long, enclosed by 3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, elliptical-obovate, subacute to obtuse, 3-6 cm long, 0.8-1 cm wide, narrowly cuneate below to the subpetiolate base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 4-5 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 5-8 mm long; pedicel 8-10 mm long; ovary 3 mm long, trialate; **sepals** yellow, spotted with red-purple, the dorsal sepal ovate, concave, 8 mm long, 14 mm long including the tail, 5.75 mm wide expanded, 3-veined with the midvein carinate, connate to the lateral sepals for 1 mm to form a sepaline cup, the apex obtuse, contracted into a thickened tail 6 mm long, the lateral sepals ovate, oblique, 8 mm long, 13 mm long including the tail, 4.5 mm wide, connate less than 1 mm at the base, with a transverse callus above the decurved base, the apices subacute, contracted to a thickened tail ca. 5 mm long; **petals** translucent, subsagittate, 4 mm long, 4 mm wide, 2-veined with the midvein carinate, the apex broadly obtuse, with a variable angle on the upper margin and a large, rounded lobule on the lower margin below the apex; **lip** unguiculate, the blade obovate, 3.5 mm long, 3.5 mm wide, the apex broadly rounded, acutely deflexed, the base above the claw with a pair of acute, elongate, retrorse angles, the disc with a pair of obtuse, minutely denticulate lamellae near the middle, the claw 2 mm long, bilobulate at the base, deeply channeled longitudinally, hinged to the apex of the column-foot; **column** slender, proportionately small, 3 mm long, winged on the distal half, minutely denticulate, the foot equally long, thick with the apex of the ovary.

BRAZIL: **Minas Gerais**: south of Minas Gerais, Serra da Mantiqueira, near the border with São Paulo and Rio de Janeiro, alt. ca. 1200 m, 25 Dec. 1981, (spirit collection 277) *A. Toscano de Brito 144* (Holotype: MO, in liquid), C. Luer illustr. 18411.

This species, known only from the original collection, is not in cultivation. It is characterized by the large habit similar to that of *Dryadella aviceps*, and large flowers similar to those of *D. edwallii*. The leaves are broad and thick; the sepals have thick tails about as long as the blades; the petals have a large, rounded lobule below the apex; and the large, obovate blade of the lip is rounded at the apex and acutely deflexed, and the basal lobes are acute, elongated and retrorse.

Dryadella vasquezii Luer, sp. nov.

Ety.: Named for Roberto Vásquez Chávez of Santa Cruz, Bolivia, noted author of Bolivian cacti and orchids.

Inter species *Dryadellae* planta perparva, foliis crassisimis semiteretibus, flore purpureo punctato, sepalorum caudis brevibus crassisimis, sepali dorsalis cauda clavellata, petalis hastatis, labelli lamina bicallosa bicornuta suborbiculata.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-4 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, elliptical, semiterete, subacute, 10-18 mm long, 4-6 mm wide, 3 mm thick, narrowed below into a subpetiolate base. **Inflorescence** a solitary flower borne by a pedicel 5-7 mm long, with a thin, loose floral bract 3-5 mm long; peduncle 2-3 mm long, enclosed by 2-3 tubular sheaths, from low on the ramicaul; ovary 1.5 mm long, thickly trialate; **sepals** fleshy, subcarinate, yellow-green, spotted with purple, the dorsal sepal ovate, concave, 6 mm long, 3 mm wide, the subacute apex contracted into a thick, subclavate tail 2 mm long, connate to the lateral sepals ca. 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, 4.5 mm long, 2.5 mm wide, the subacute apex contracted into a thick tail ca. 1 mm long, connate 1 mm at the base, with a low, transverse callus medially above the concave base; **petals** translucent greenish white, oblong-subhastate, 1.75 mm long, 1.75 mm wide, the apex broadly obtuse, with an obtuse, rounded angle on both margins; **lip** mottled with purple, unguiculate, the blade thick, suborbicular-pyriform, 1.75 mm long, 1.5 mm wide, the apex round, entire, the base above the claw with a pair of subacute angles, the disc with a low pair of lamellae below the middle, the claw 0.75 mm long, bilobulate at the base, hinged to the apex of the column-foot; **column** green, marked with purple, 2 mm long, longitudinally winged on the distal half, the foot thick, equally long.

BOLIVIA: **Santa Cruz**: epiphytic in seasonally dry forest north of Santa Cruz, flowered in cultivation at in Santa Cruz by Roberto Vásquez, Dec. 1978, *C. Luer 3626* (Holotype: SEL).
R. Vásquez 965 (MO), C. Luer illustr. 15422.

This species, endemic in lowland east central Bolivia, is characterized by very small, thickly coriaceous leaves and a gaping, purple-spotted flower. The tails of the sepals are short and thick, the tail of the dorsal subclavate; the petals are hastate; and the blade of the lip is suborbicular-pyriform with a broadly rounded, entire apex.

Dryadella verrucosa Luer & R.Escobar, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 164, 1999.

Ety.: From the Latin *verrucosus*, "verrucose," referring to the blade of the lip.

Plant medium in size, epiphytic, densely caespitose; roots coarse. Ramicauls erect, 10-15 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, pusticulate on the dorsal surface, subacute, 3-6 cm long, 4-5 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 4-5 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, 6 mm long; pedicel 6-7 mm long; ovary 1 mm long, minutely verrucose; **sepals** cream-colored, purple-brown spots, thick, diffusely pusticulate-verrucose, the dorsal sepal broadly ovate, concave, obtuse, 6.5 mm long, 5 mm wide, connate to the lateral sepals for 0.5 mm to form a sepaline cup, the lateral sepals broadly ovate, oblique, 5 mm long, 4 mm wide, the apex obtuse, shortly acuminate, connate 0.5 mm at the base, with a transverse callus above the deflexed base; **petals** translucent brown, subquadrate, sagittate, 2.5 mm long, 2.5 mm wide, the apex obtuse, obtusely angled on both upper margin below the apex, with a ligulate lobule on the labellar margin; **lip** brown, long-unguiculate, rigid, the blade elliptical, diffusely verrucose with denticulate margins, acutely deflexed near the middle, 3.25 mm long, 2.5 mm wide, the base above the claw with a pair of short, obtuse lobules directed posteriorly, the disc with a low rounded pair of diverging calli below the middle, the claw 1.5 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, 3 mm long, longitudinally winged above the middle, the foot thick, equally long.

COLOMBIA: **Antioquia**: Mun. of Cocorná, epiphytic in cloud forest near Río Cocorná, alt. 2000 m, 2 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10091* (Holotype: MO).

This distinctive species is known only from the original collection. Although related to the variable and widely distributed *Dryadella simula*, this species is recognized by the pusticulate leaves and pusticulate sepals. The sepals are broadly ovate, obtuse, shortly acuminate but tailless. The petals of the two species are somewhat similar. The blade of the lip of *D. verrucosa*, however, is diffusely and markedly verrucose.

Dryadella vitorinoi Luer, Selbyana 23: 181, 2002.

Ety.: Named for Vitorino Paiva Castro Neto of São Paulo, Brazil, who discovered this species.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 2-4 mm long, enclosed by 2-3 thin, loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly linear-obovate, acute, 25-40 mm long, 4-6 mm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a solitary flower apparently borne singly by a peduncle less than 1 mm long, enclosed by a loose sheath, from low on the ramicaul; floral bracts thin, imbricating, 2-3 mm long; pedicel 1 mm long; ovary 0.75-1 mm long, trialate; **sepals** color, the dorsal sepal triangular-ovate, concave, 5.5-6.5 mm long, 2.5-3 mm wide, the apex acute, thickened, connate below to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, acute, 5-5.5 mm long, 2.5-3 mm wide, connate 1 mm at the base, with a low, transverse callus above the decurved base; **petals** erect, oblong-bilobed, 3.5-4 mm long, 2-2.25 mm wide, the apical oblong, narrowly obtuse, the lateral lobe protuberant, obtuse or rounded, below the middle on the labellar margin; **lip** unguiculate, the blade thick, suboblong, 2.25 mm long, 1.5 mm wide, the apex rounded, the base above the claw with a pair of obtuse angles, the disc with a pair of rounded lamellae below the middle, the claw 1 mm long, bilobulate at the base, shallowly channeled longitudinally, hinged to the apex of the column-foot; **column** semiterete, 2 mm long, longitudinally erose-winged on the distal half, bidentate at the apex, the foot equally long.

BRAZIL: Without locality, collected by Vitorino Castro, delivered by G. Carnevali, 1991, *C. Luer 15540* (Holotype: MO); without collection data, obtained Aug. 1993, *Toscani DeBrito 889* (MO), C. Luer illustr. 16951.

This little species is known from two sources, one a collection by Vitorino Paiva Castro Neto. *Dryadella vitorinoi* is similar to the common and widely distributed *D. aviceps*, but the former is distinguished by the acute sepals and comparatively long, erect, bilobed petals. The upper lobes meet over the lip while the lower lobes rest on the low, transverse callus of the lateral sepals.

Dryadella werneri Luer, Selbyana 22: 103, 2001.

Ety.: Named for Florian Werner, Yanayacu Biological Station, Cosanga, Napo, who collected this species.

Plant small, epiphytic, densely caespitose; roots slender but proportionately coarse. Ramicauls erect, 1-1.5 mm long, enclosed by a tubular sheath. **Leaf** erect, thickly coriaceous, narrowly ovate, semiterete, subacute, 15-20 mm long, 4-5 mm wide, 3 mm thick, abruptly narrowed at the base. **Inflorescence** a congested, successively few-flowered raceme borne by a peduncle 1-2 mm long, enclosed by a sheath, from low on the ramicaul; floral bracts thin, imbricating, acuminate, 4 mm long; pedicel 3-4 mm long; ovary 2 mm long, 2 mm wide, thickly trialate; **sepals** spotted with red, the dorsal sepal ovate, concave, the blade 4 mm long, 3 mm wide, barely connate to the lateral sepals to form a gaping sepaline cup, the apex subacute, contracted into a thickened tail 3-3.5 mm long, the blades of the lateral sepals broadly ovate, oblique, 3 mm long, 2.5 mm wide, the apex obtuse, contracted into a thickened tail 3-3.5 mm long, with a transverse callus above the deflexed base; **petals** subsagittate-obovate, the apex obtuse with a broad angle on the upper margin and a broadly rounded angle on the labellar margin, 2 mm long, 1.75 mm wide; **lip** unguiculate, the blade suborbicular, convex, with an erect, acute angle to either side of the claw, 2 mm long expanded, 1.75 mm wide, the disc with a pair of low, erect calli below the middle, the apex broadly rounded, decurved, the claw thick, 0.75 mm long, 0.5 mm wide, with a pair of lobules at the base, hinged to the apex of the column-foot; **column** semiterete, 2.75 mm long, with a retrorse, oblong process below the middle, the apex dentate, the foot equally long, thick with the apex of the ovary.

ECUADOR: **Zamora-Chinchipe**: near San Francisco Biological Station, alt. 1860 m, 4 Apr. 1999, *F. Werner 12528* (Holotype: MO), C. Luer illustr. 19376.

This species is most similar to the Brazilian *Dryadella lilliputiana*, but distinguished from the latter by shorter tails; a short, thick claw of the lip; and a dentate column. *Dryadella werneri* is characterized by the small, densely caespitose habit with thick, semiterete to fusiform leaves. The leaves, broadest below the middle, are contracted at the base into a very short pedicel and ramicaul. The flowers are produced in a congested, successively flowered raceme. The tails of the sepals are thick and about as long as the blade. The margins of the petals are broadly angled. The claw of the lip is short and broad. The column bears a pair of retrorse processes near the middle, while the apex is denticulate.

Dryadella wuerstlei Luer, sp. nov.

Ety.: Named for Berthold Würstle of Spielberg, Germany, who cultivates this species.

Species haec *D. zebrinae* (Porsch) Luer affinis, sed habitu minore, sepalorum caudis abrupte proportione multilongioribus et labelli lamina minute denticulata differt.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 5-7 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical, sulcate, acute, 20-28 mm long, 2-3 mm wide, 1.5-2 mm thick, narrowed below to the base. **Inflorescence** a single or a successively few-flowered raceme borne by a peduncle 2-3 mm long, enclosed by a sheath, from low on the ramicaul; floral bract thin, 5-8 mm long; pedicel 7-11 mm long; ovary 2 mm long, trialate; **sepals** pale green, diffusely dotted with purple, the dorsal sepal elliptical, concave, the blade 6 mm long, 4 mm wide, connate to the lateral sepals for 1 mm to form a sepaline cup, the apex obtuse, contracted into a slender, spotted tail 9 mm long, total length 15 mm, the blades of the lateral sepals ovate, oblique, 5 mm long, 3 mm wide, the apex obtuse, contracted into a slender tail 6 mm long, total length 12 mm long, with a transverse callus above the deflexed base; **petals** translucent light yellow, heavily suffused with purple, dolabriform, the apex broadly obtuse with obtuse angles on either margin, 2.5 mm long, 2.5 mm wide;

lip green, heavily suffused with purple-brown, long-unguiculate, the blade obovate, broadly rounded at the apex with a minutely denticulate margin, decurved above the middle, 2.5 mm long, 2 mm wide, the base above the claw with a pair of acute, retrorse angles, the disc with a pair of low, erect, rounded calli below the middle, the claw 1 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, marked with rose, slender below the middle, winged above the middle with the lower margin acutely angled, denticulate at the tip, 2.5 mm long, the foot thick, equally long.

BRAZIL. Without collection data, purchased by B. Würstle from Ghillany, flowered in cultivation at Spielberg, Germany, 23 May 1980, *C. Luer 5269* (Holotype: SEL); same collection, obtained from B. Würstle, cultivated by R. Jenny in Bern Switzerland, 15 Sept. 1989, *C. Luer 14446* (MO).

This little Brazilian species, unfortunately without collection data, is similar to the frequent and variable *Dryadella zebrina*. *Dryadella wuerstlei* appears to have been the subject of the painting used for *D. zebrina* on page 225, of *Orchidaceae Brasilienses*. Vegetatively, it is very small with thick, narrow leaves. Although the total lengths of the sepals are similar to those of *D. zebrina*, the blades of the sepals of *D. wuerstle* are distinctly smaller, and abruptly contracted into proportionately longer, more slender tails. The petals and lip are considerably smaller, and the margin of the lip is minutely denticulate.

Dryadella zebrina (Porsch) Luer, Selbyana 2: 209, 1978.

Bas.: *Masdevallia zebrina* Porsch, Oesterr. Bot. Z. 55: 154, 1905.

Ety.: From the Latin *zebrinus*, "like a zebra," referring to the banded dorsal sepal.

Syn.: *Masdevallia carinata* Cogn., Bull. Soc. Roy. Belgique 43: 305, 1907.

Ety.: From the Latin *carinatus*, referring to the carinate sepals.

Plant medium in size for the genus, epiphytic, densely caespitose; roots slender. Ramicauls erect, 7-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, thickly coriaceous, sometimes semiterete, elliptical, acute, 2-5.5 cm long, 3-7 mm wide, 2-3 mm thick, narrowed below to the base. **Inflorescence** a congested successively few-flowered raceme borne by a peduncle 1-3 mm long, mostly enclosed by a bract at the base, from below the apex of the ramicaul; floral bract thin, 5-10 mm long; pedicel 10-15 mm long; ovary trialate, 3 mm long; **sepals** yellow-green, diffusely spotted with purple, the dorsal sepal with the spots more or less in transverse bars, ovate, concave, 12-15 mm long including the tail, 4-5 mm wide, the apex subacute, contracted into a slender tail 5-8 mm long, connate to the lateral sepals for 1 mm to form a sepaline cup, the lateral sepals ovate, oblique, 11-12 mm long including the tail 4-6 mm long, 3-4 mm wide, the apex acute, acuminate into the tail, with a transverse callus above the deflexed base, connate 1 mm at the bases; **petals** translucent yellow, spotted with purple, transversely sagittate, 2.5-3 mm long, 2-3 mm wide, the apex broadly obtuse, acutely angled on the upper margin of the apex, obtusely angled on the lower margin; **lip** yellow, long-unguiculate, spotted with purple, the blade obovate-orbicular, 2.5-3 mm long, 2-2.75 mm wide, the apex broadly rounded, decurved, the base above the claw with a pair of acute lobules directed posteriorly, the disc with a pair of erect, angled calli converging from the claw, the claw 1.5 mm long, shallowly channeled, bilobulate at the base, hinged to the apex of the column-foot; **column** green, spotted with purple, 3-4 mm long, longitudinally winged and denticulate above the middle, the foot equally long, thick with the apex of the ovary.

BRAZIL: State unknown: Raiz da Serra, alt. 20-25 m, Aug. 1901, *Wettstein & Schiffner s.n.* (Holotype: presumably destroyed at B). **Rio de Janeiro**: collected locally, cultivated by Orquideario Binot, flowered in cultivation 30 Nov. 1989, *C. Luer 14500* (Neotype here designated: MO). Without collection data, *A. Glaziou s.n.* (holotype of *M. carinata*: BR). **Paraná**: Serra do Mar, Monte Alegre, alt. 700-900 m, 1 Nov. 1914, *P. Dusén 15842* (MO). **São Paulo**: Serra do Mar Monte Alegro, *P. Dusén 13294*; Ypiranga, *P. Dusén 8987*; Campos do Jordão, SP, alt. 1500 m, 13 July 1916, *P. Campos Porto s.n.* (RB). **Rio Grande do Sul**: Santa Izabel, 3 Nov. 1961, *E. Pereira 6745* (RB). **Santa Catarina**: Serra do Mar, alt. 600 m, collected by W.F. Endsfeldz, flowered in cultivation in São Paulo, 25 Nov. 1989, *C. Luer 14482* (MO). Without locality, obtained from Orquideario Binot, flowered in cultivation by B. Würstle at Spielberg, Germany, 27 Oct. 1985, *C. Luer 14454* (MO);

BOLIVIA: **La Paz**: Inquisivi, between Inquisivi and Circuata, alt. 2550 m, 27 Jan. 1981, *C. Luer, J. Luer & R. Vásquez 5807, 5785* (SEL); south of Inquisivi, alt. 2550 m, Feb. 1981, flowered in cultivtion at SEL, 4 July 1981, *C. Luer, J. Luer & R. Vásquez 6422* (SEL); near Polea at the pass west of Inquisivi, alt. 2400 m, 26 Nov. 1992, *C. Luer, J. Luer & R. Vásquez 16596* (MO); Saavedra, along Río Charazani, alt. ca. 2500 m, Nov. 1992, flowered in cultivation in San Francisco, CA, by *W. Teague 239* (MO), C. Luer illustr. 17748.

PERU: **Amazonas**: near Pomacochas, alt. 1800 m, collected by W. Königer et al., 1978, flowered in cultivation, 22 May 1980, *C. Luer 5265* (SEL); Pomacochas, *K. Tokach 44* (MO); Vilcaniza, collected by Cordelia Head, flowered in cultivation by the Jesups in Bristol, CT, 10 Dec. 1988, *C. Luer 13801* (MO). COLOMBIA: *Cundinamarca*: San Antonio, alt, 1600-1700 m, collected by Padre Pedro Ortiz, March 1982, flowered in cultivation in Bogotá, 24 Apr. 1982, *P. Ortiz s.n.* (SEL), C. Luer 7527.

This species is relatively common and widely distributed from the Eastern Cordillera of Colombia, where it is documented from a single collection, and south through Bolivia and Brazil. Especially variable vegetatively, small plants less than two centimeters tall, and large plants six centimeters tall are not unusual. The leaves are thickly fleshy to the base. The spotted flowers are relatively large with tails about as long as, or longer than the blade. The spots are often arranged into transverse bars on the dorsal sepal, which suggested a zebra to Porsch. The apices of the sepals vary in thickness and degrees of narrowing into the tails, sometimes more or less abruptly, sometimes narrowly acuminate. The petals are oblong, obtuse and angled on both sides above the middle. The blade of the lip is deflexed near the middle, the apical margin is round, and the calli are erect and subacute.

EXCLUDED NAME

Dryadella perpusilla (Kraenzl.) Luer, Selbyana 2: 209, 1978.

Bas.: *Masdevallia perpusilla* Kraenzl., Repert. Spec. Nov. Regni. Veg. 1: 179, 1906.

PERU: **Junín**: Tarma, near La Merced in the Chanchamayo Valley in light forest, alt. 800-1000 m, *A. Weberbauer 1015* (Holotype presumably destroyed at B).

ACKNOWLEDGMENTS

I thank all the herbaria that have permitted repeated visits to their collections, especially the herbaria of AMES, K, and W for their most important, historical collections. I thank Dr. Gustavo Romero, curator of the AMES herbarium for his invaluable help. I thank Victoria Hollowell, Amy McPherson and Kristin Pierce, all of MO, for their expertise in proofreading.

I also thank the Pleurothallid Alliance and those members who made the inking by Stig Dalström of many of the illustrations possible.

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KRÄNZLIN, F., 1925. Monographie der Gattungen *Masdevallia, Lothiania, Scaphosepalum, Cryptophoranthus & Pseudoctomeria*. Repert. Spec. Nov. Regni Veg. Beih. 34: 197-201.

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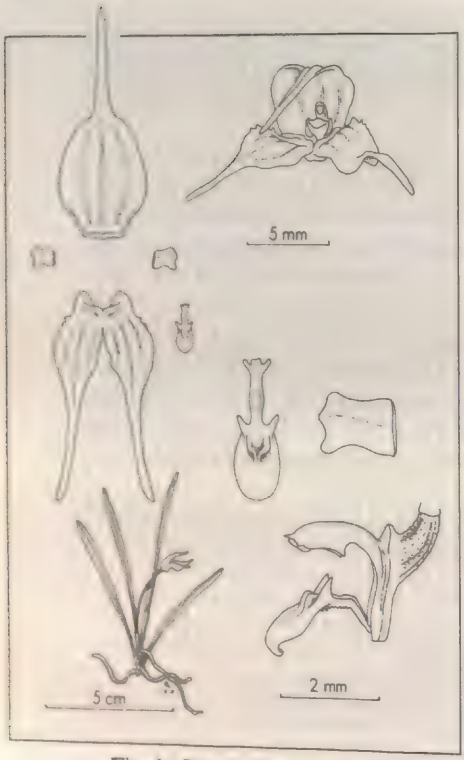

Fig. 1. Dryadella albicans

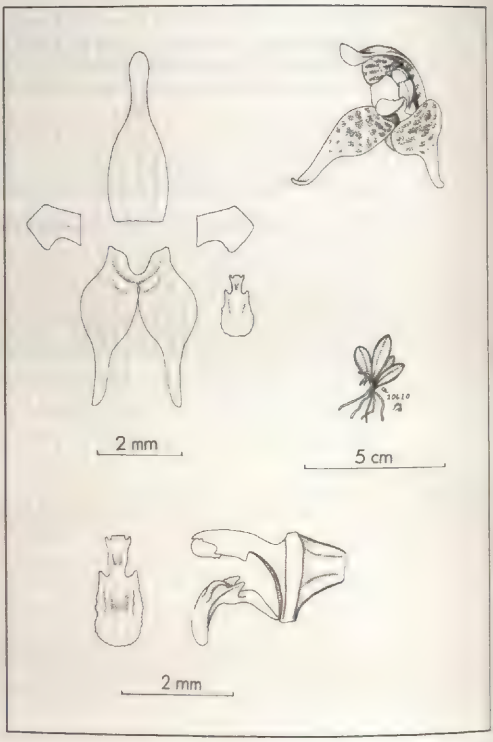

Fig. 2. Dryadella anapaulae

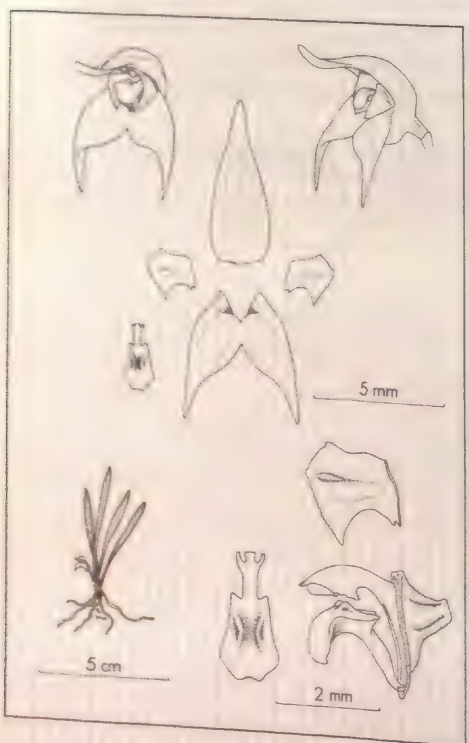

Fig. 3. Dryadella aurea

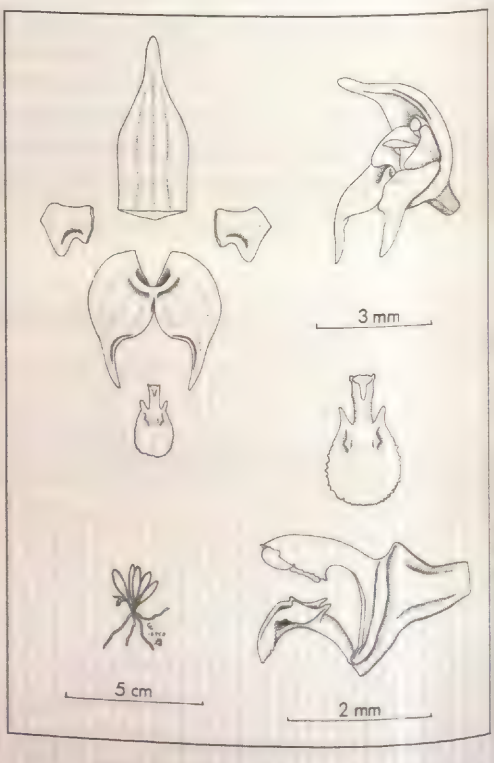

Fig. 4. Dryadella auriculigera

Fig. 5a. Dryadella aviceps

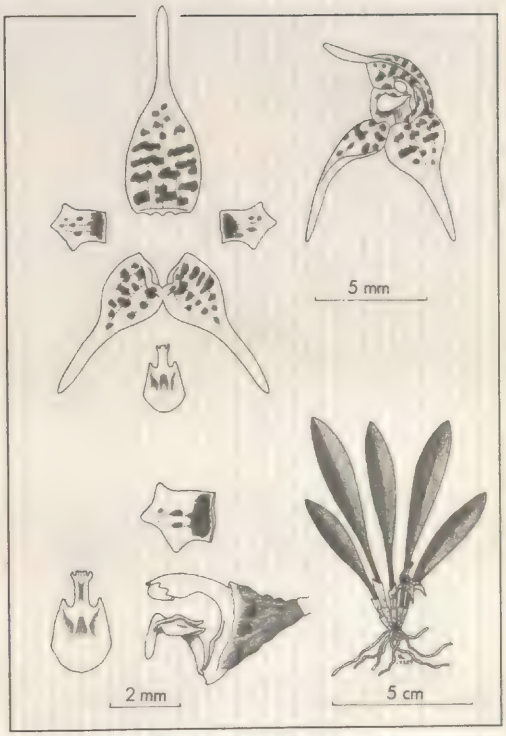

Fig. 5b. Dryadella aviceps

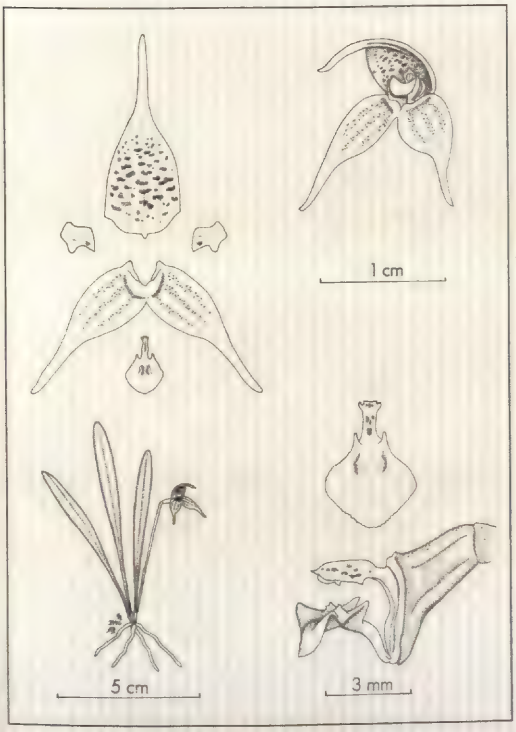

Fig. 6a. Dryadella barrowii

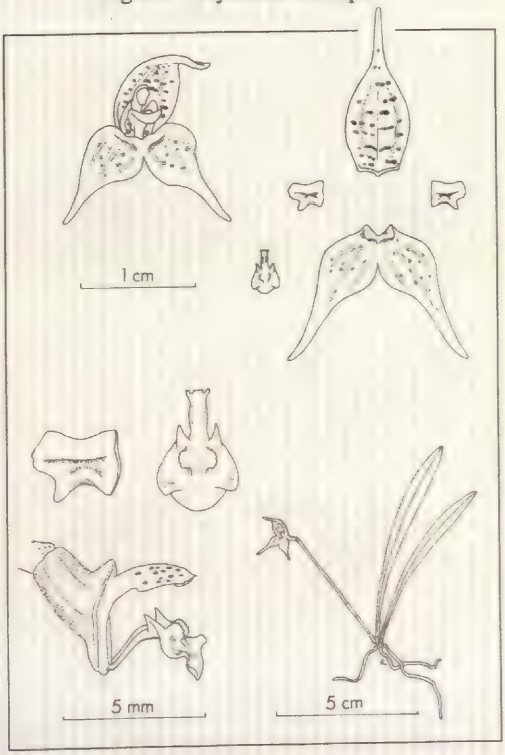

Fig. 6b. Dryadella barrowii

Fig. 7. Dryadella butcheri

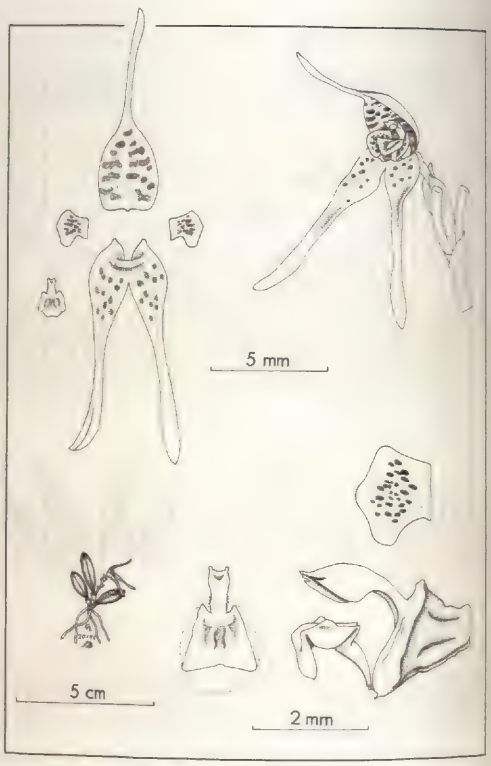

Fig. 8. Dryadella clavellata

Fig. 9. Dryadella crassicaudata

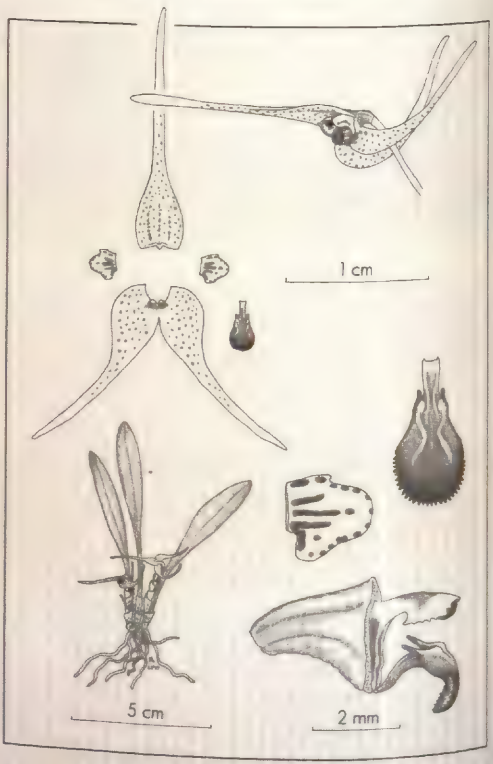

Fig. 10. Dryadella crenulata

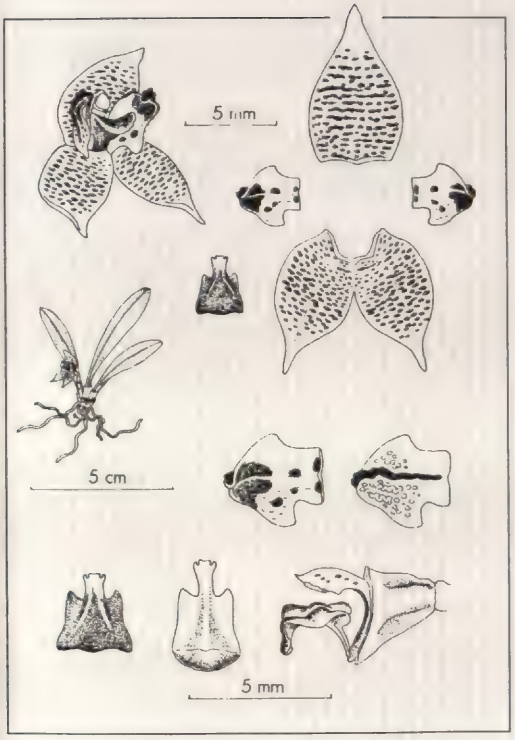

Fig. 11. Dryadella cristata

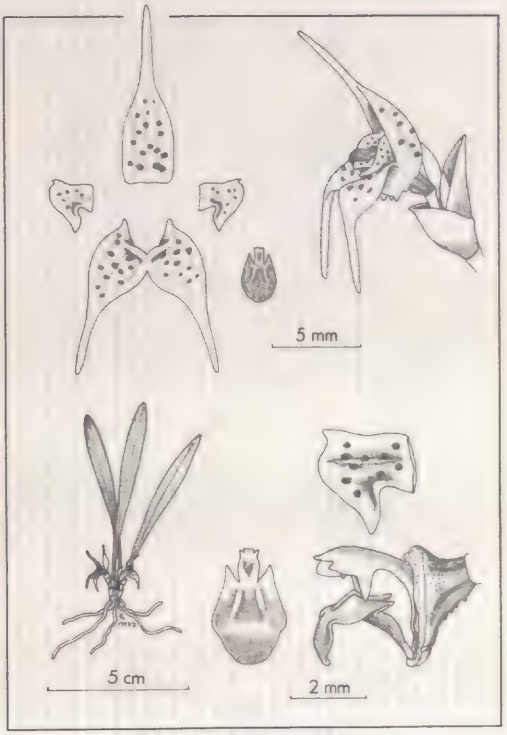

Fig. 12. Dryadella cuspidata

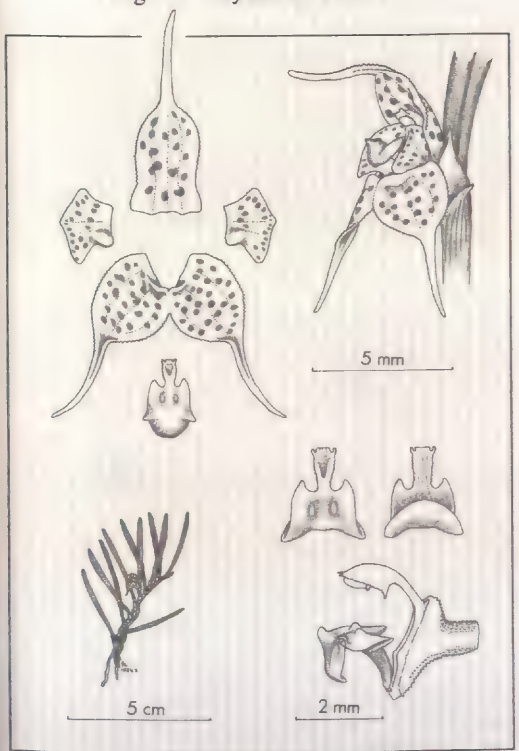

Fig. 13. Dryadella dodsonii

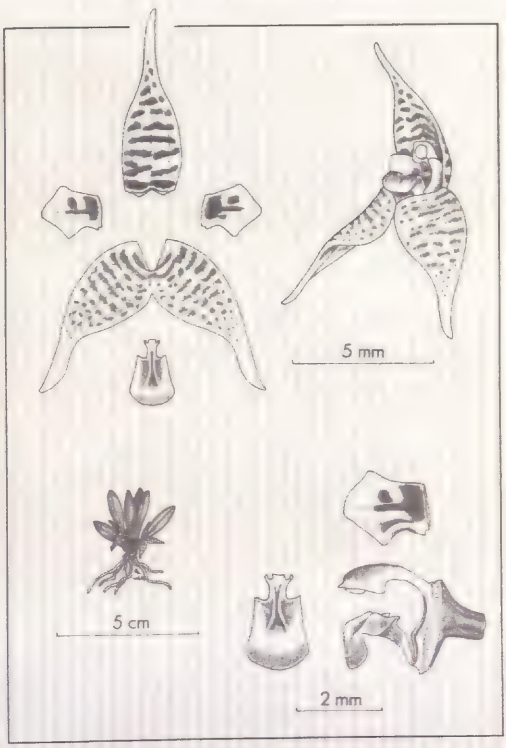

Fig. 14. Dryadella dressleri

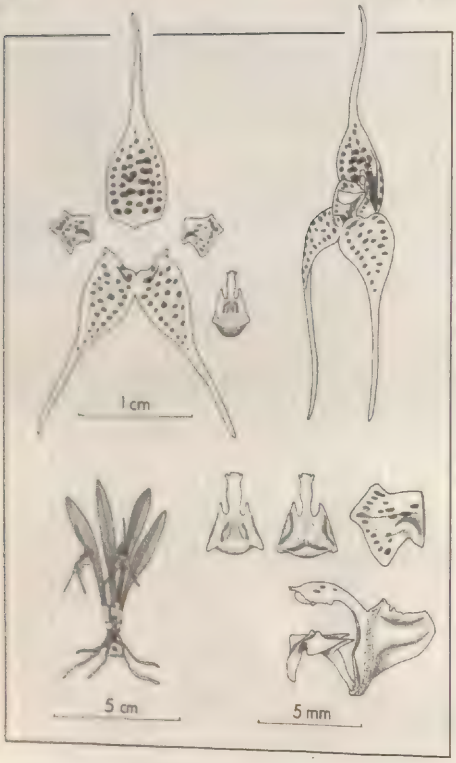

Fig. 15. Dryadella edwallii

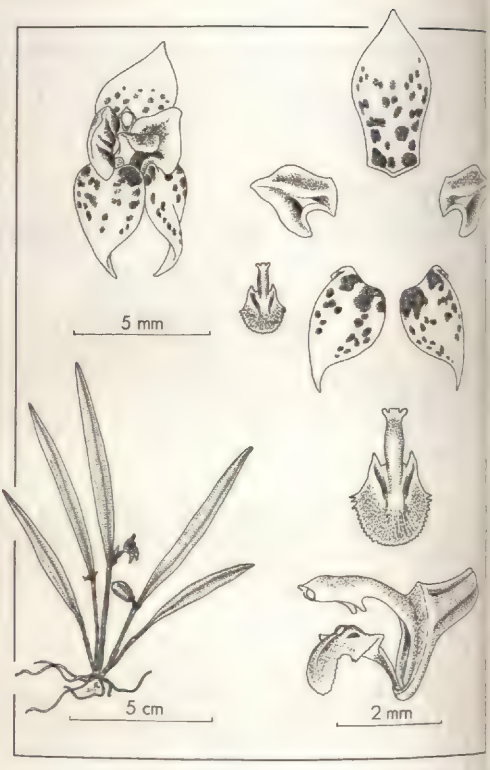

Fig. 16. Dryadella elata

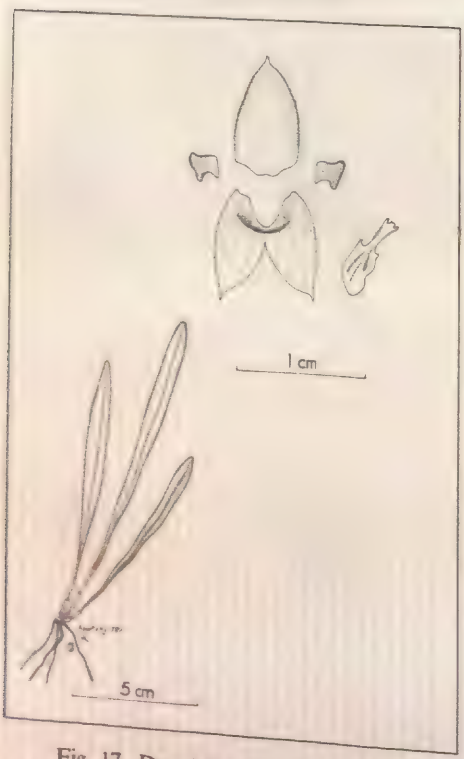

Fig. 17. Dryadella espirito-santensis

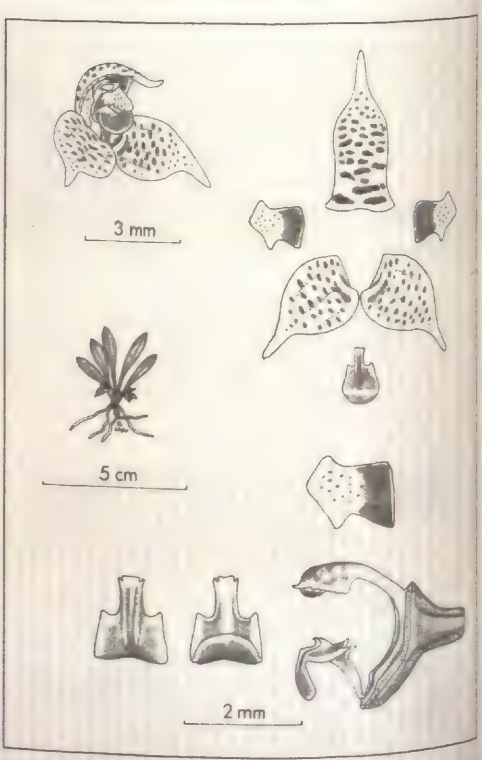

Fig. 18. Dryadella fuchsii

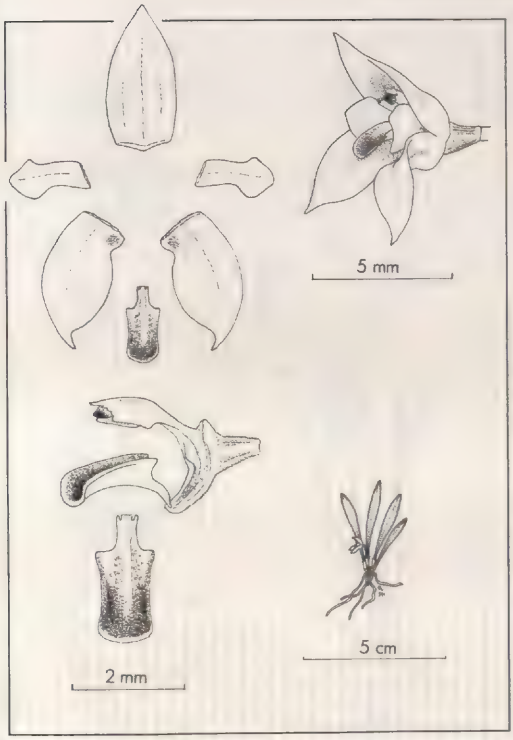

Fig. 19a. Dryadella gnoma

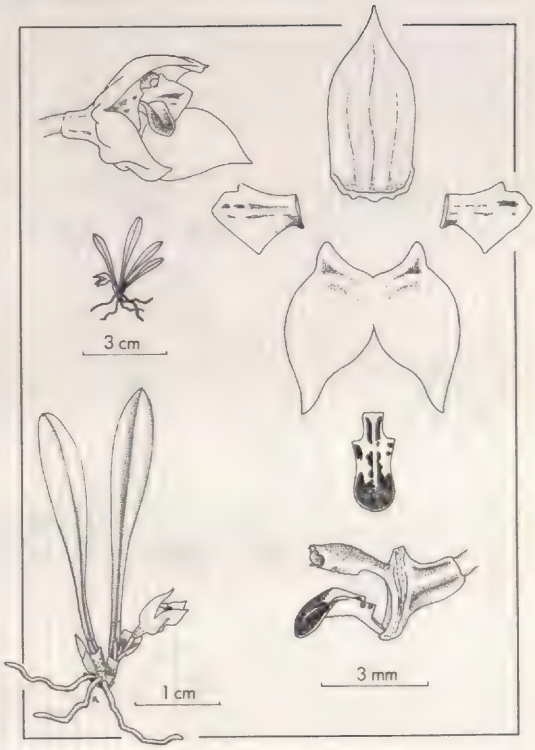

Fig. 19b. Dryadella gnoma

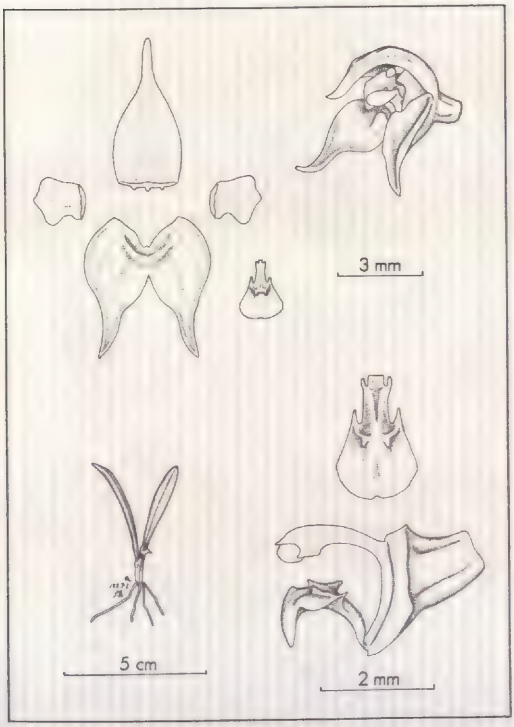

Fig. 20. Dryadella gomes-ferreirae

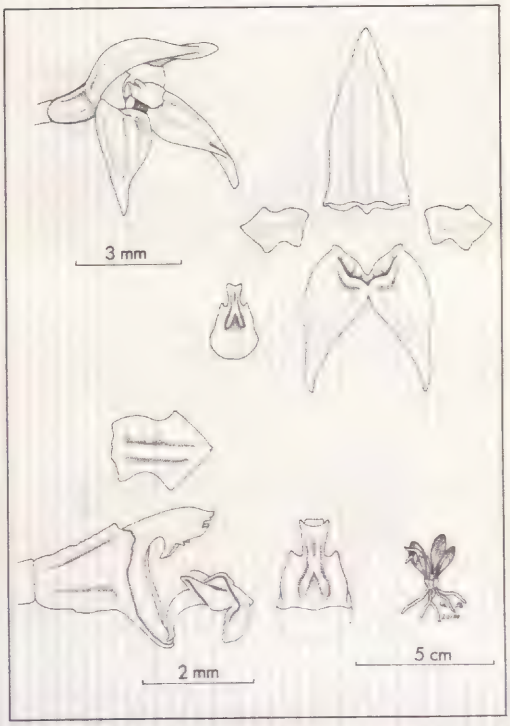

Fig. 21. Dryadella greenwoodiana

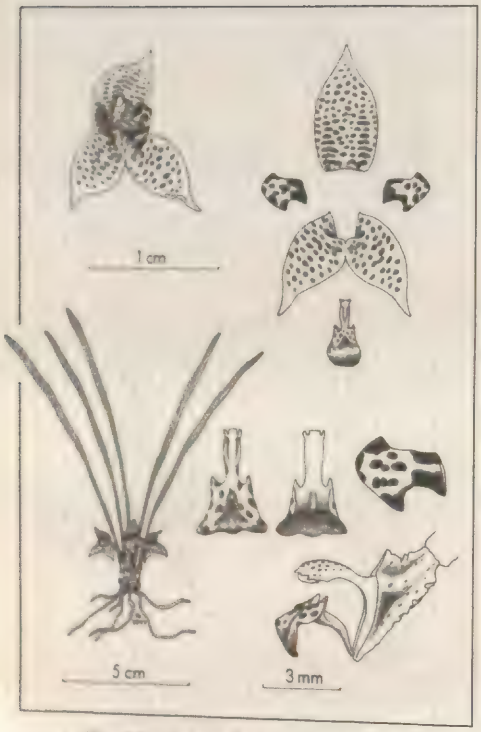

Fig. 22. Dryadella guatemalensis

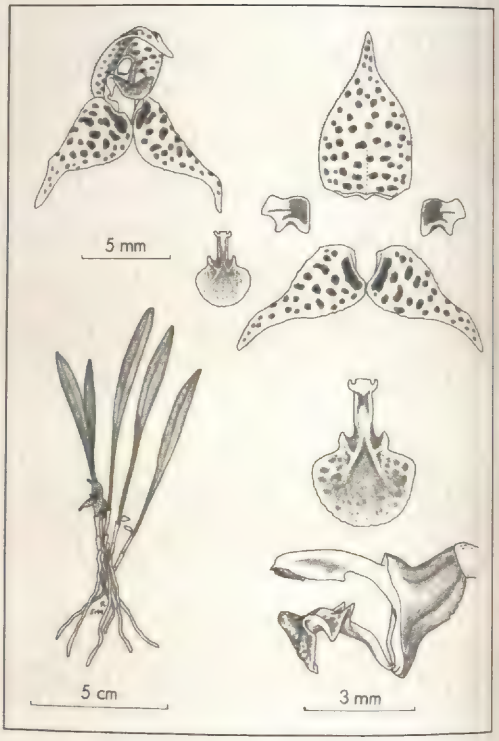

Fig. 23. Dryadella hirtzii

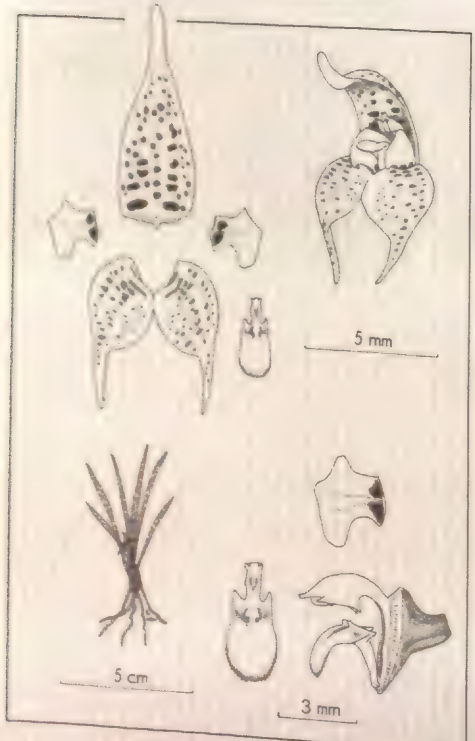

Fig. 24. Dryadella kautskyi

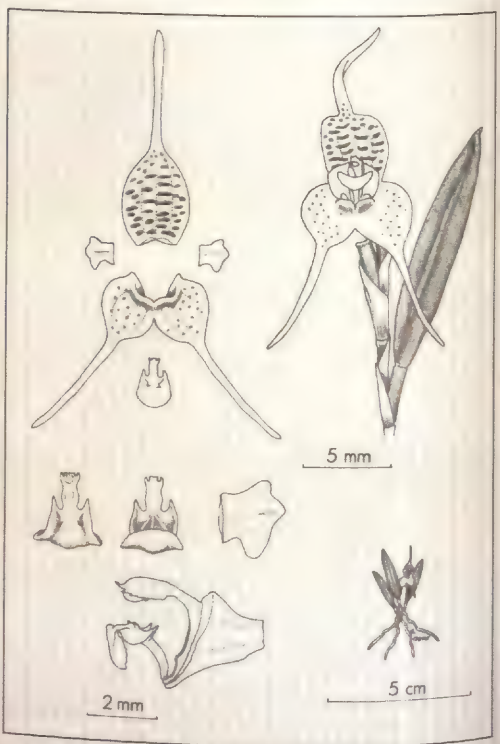

Fig. 25. Dryadella lilliputiana

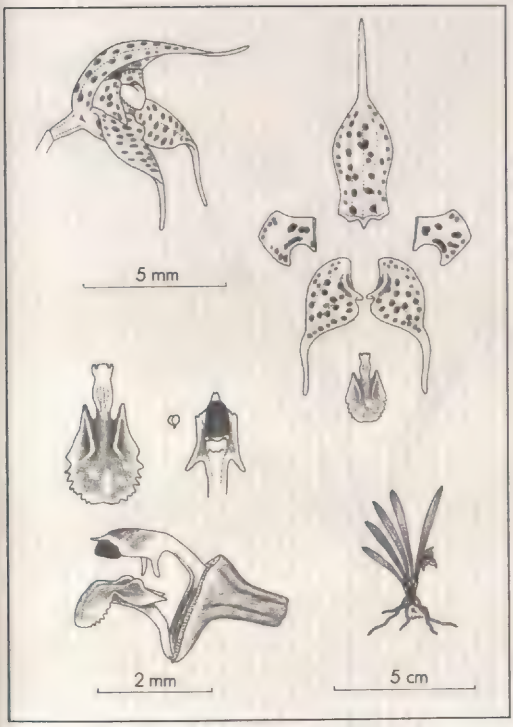

Fig. 26. Dryadella linearifolia

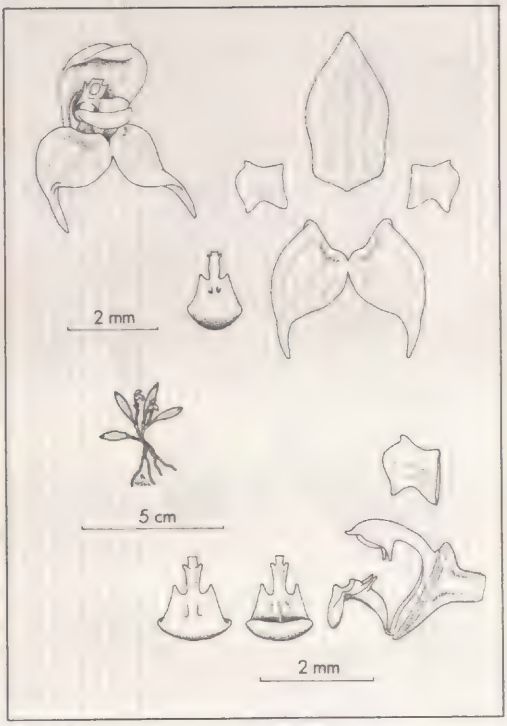

Fig. 27. Dryadella lueriana

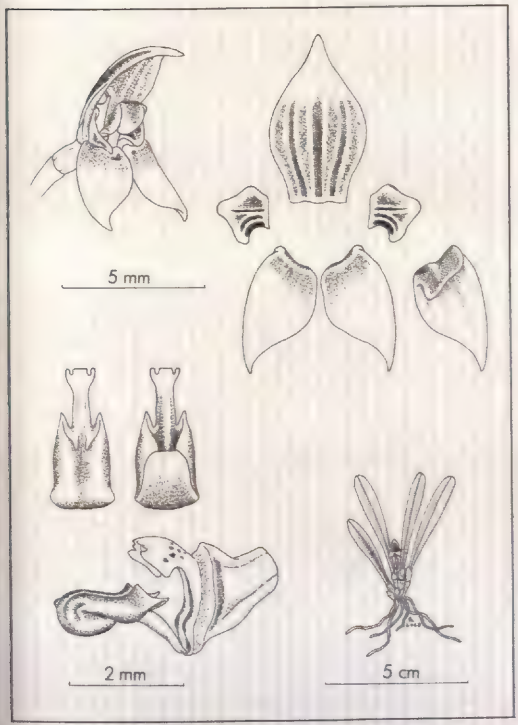

Fig. 28. Dryadella marsupiata

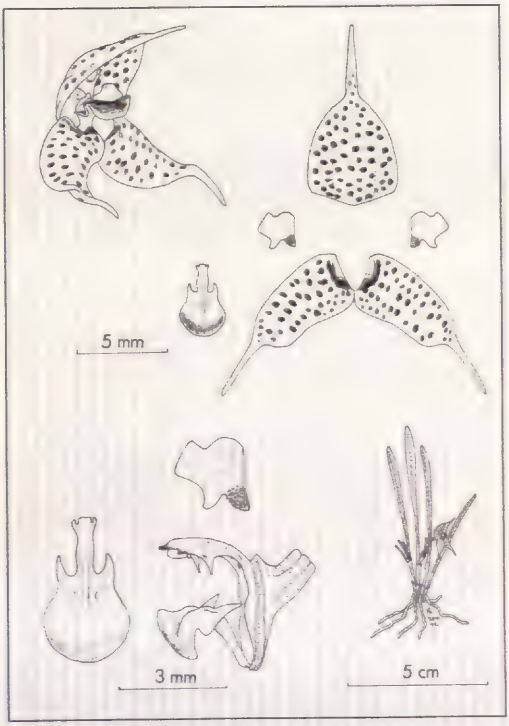

Fig. 29. Dryadella meiracyllium

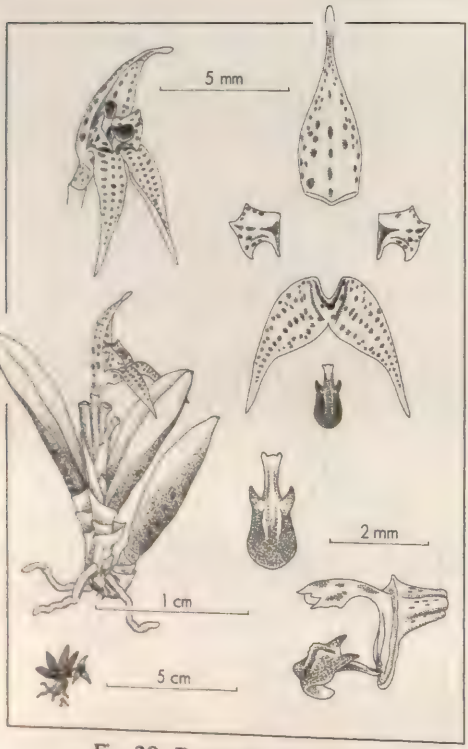

Fig. 30. Dryadella minuscula

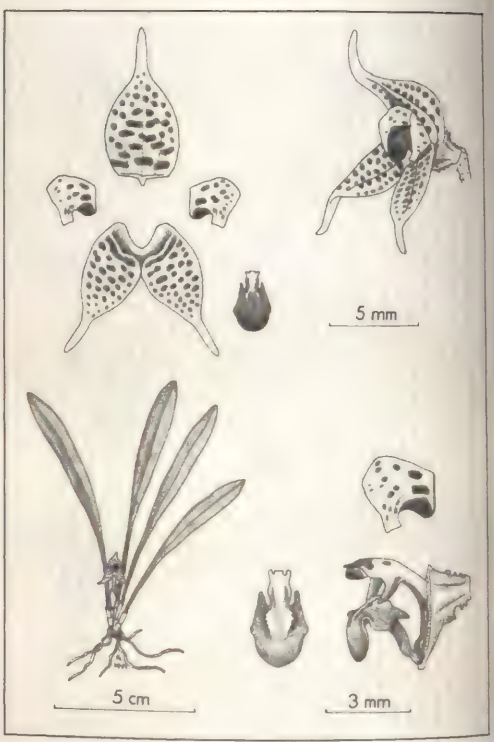

Fig. 31. Dryadella mocoana

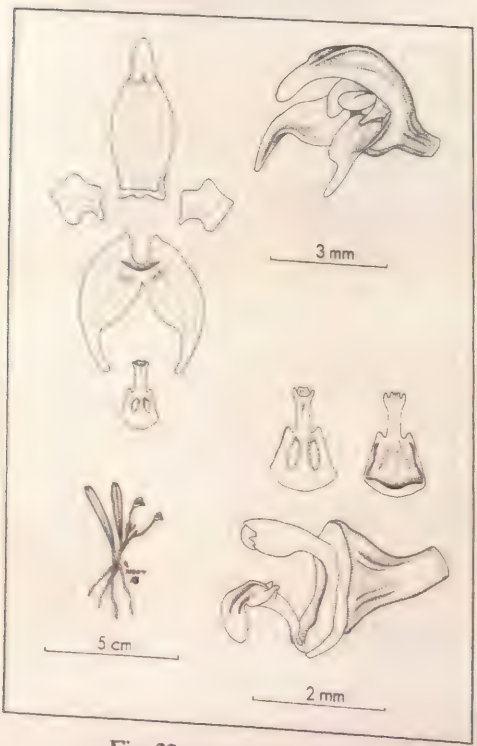

Fig. 32. Dryadella nasuta

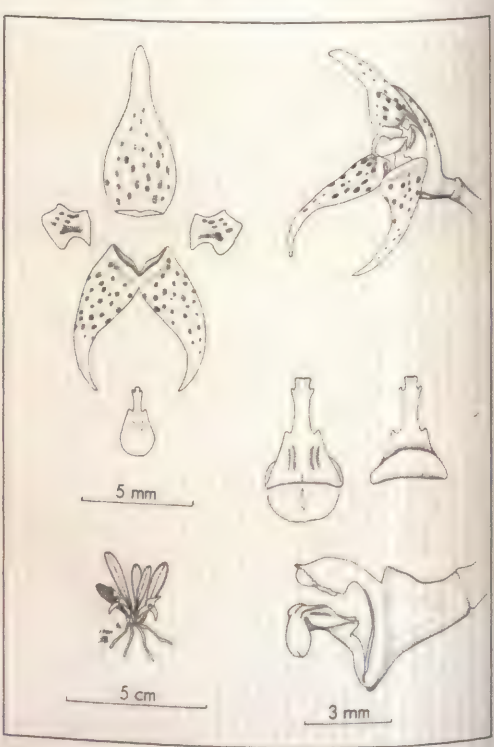

Fig. 33. Dryadella nortonii

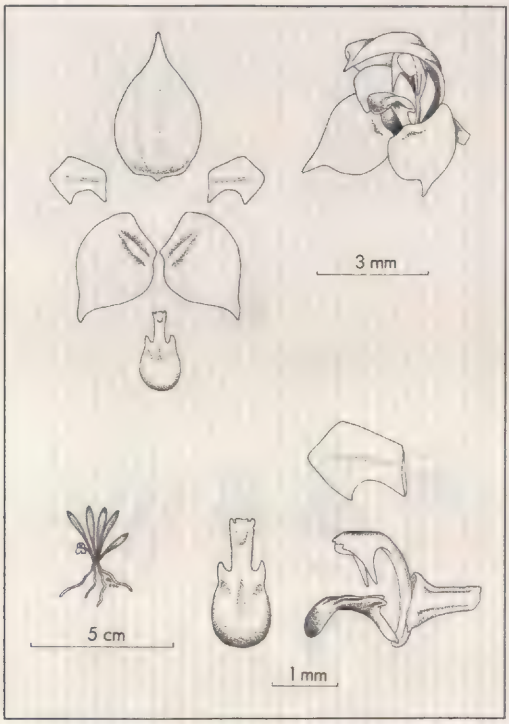

Fig. 34. Dryadella odontostele

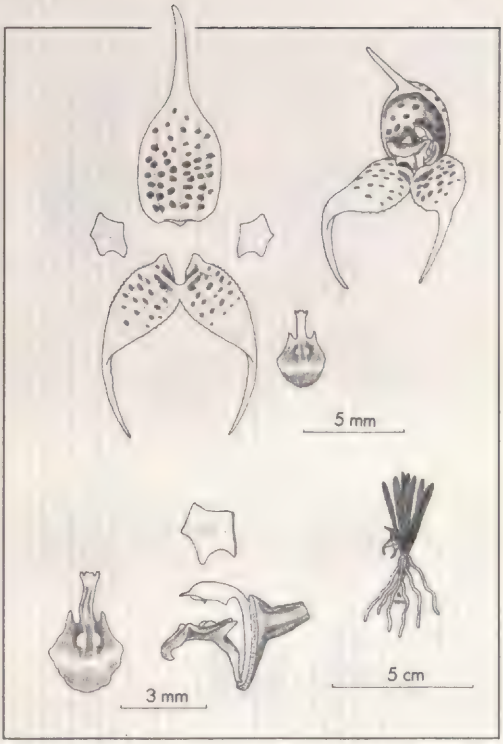

Fig. 35a. Dryadella pachyrhiza

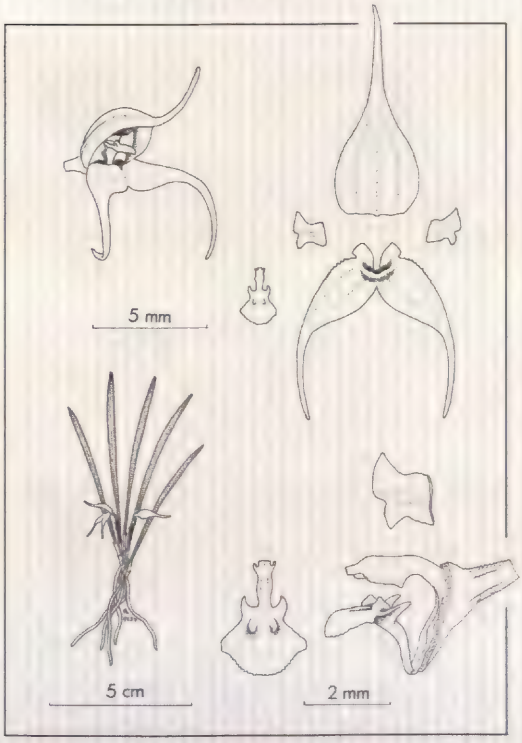

Fig. 35b. Dryadella pachyrhiza

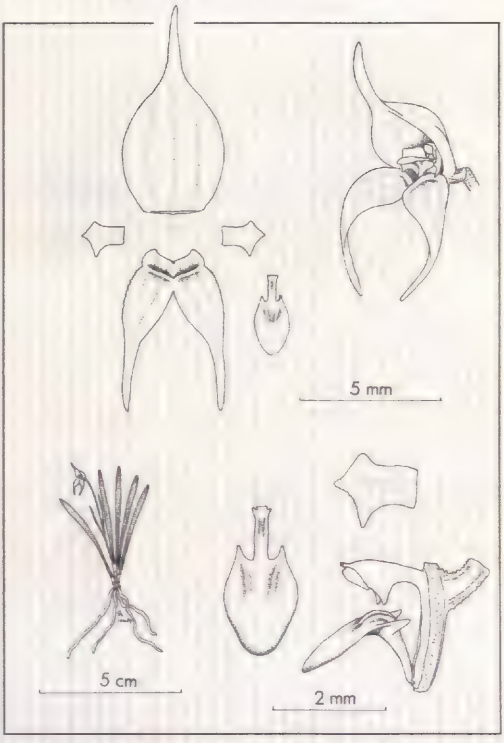

Fig. 36. Dryadella pusiola

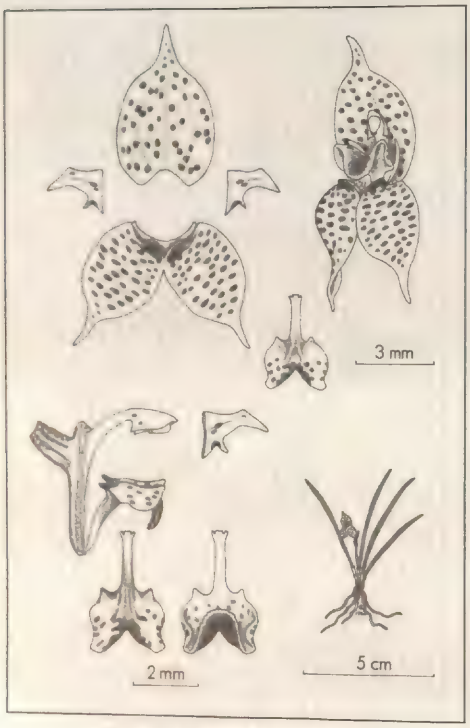

Fig. 37. Dryadella rodrigoi

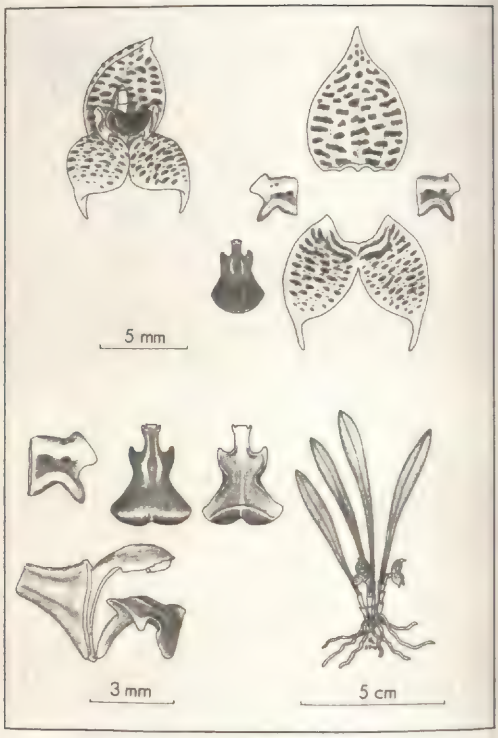

Fig. 38a. Dryadella simula

Fig. 38b. Dryadella simula

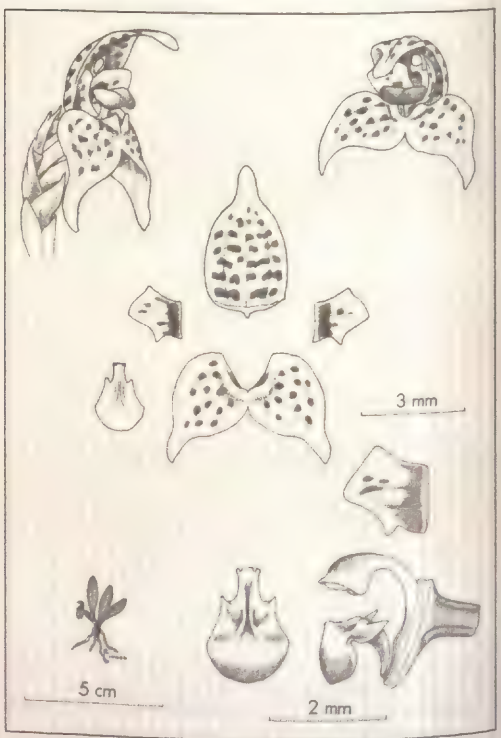

Fig. 39. Dryadella sororcula

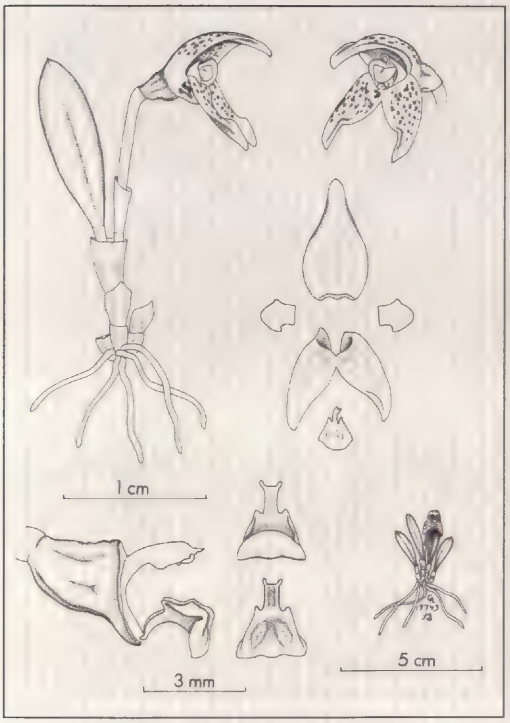

Fig. 40. Dryadella sublata

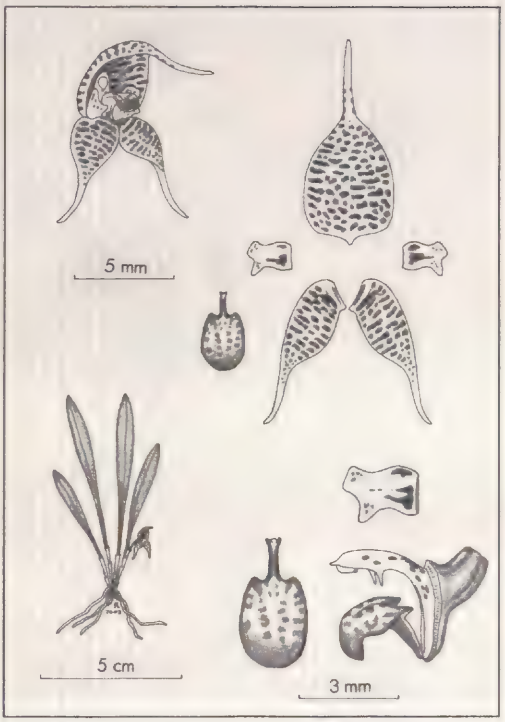

Fig. 41. Dryadella summersii

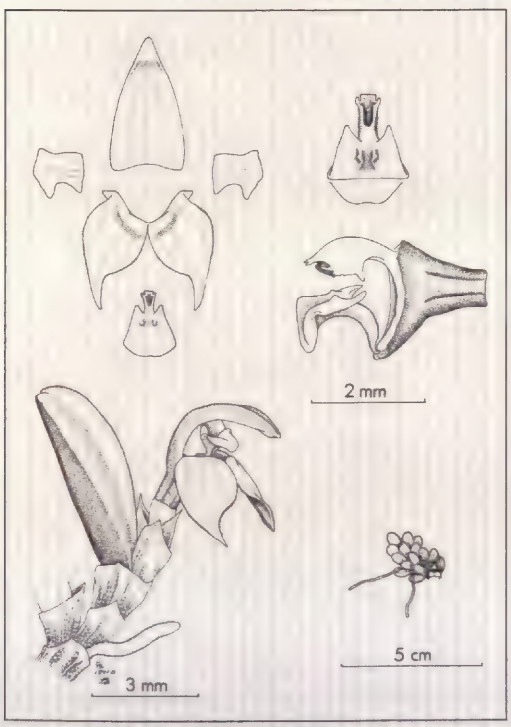

Fig. 42. Dryadella susanae

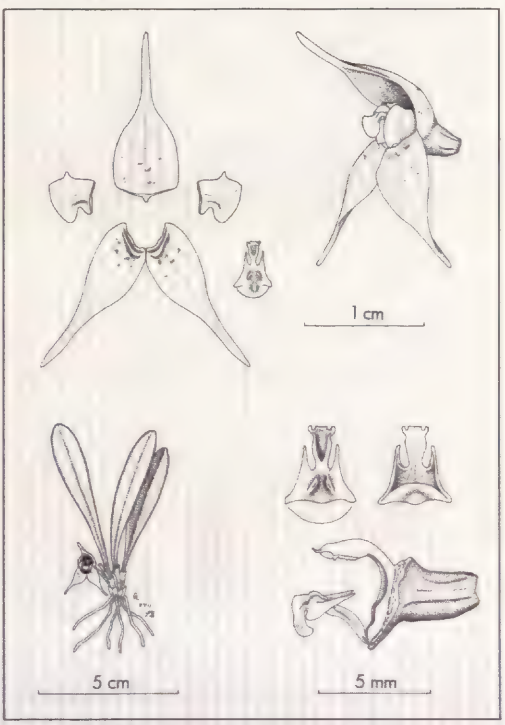

Fig. 43. Dryadella toscanoi

Fig. 44. Dryadella vasquezii

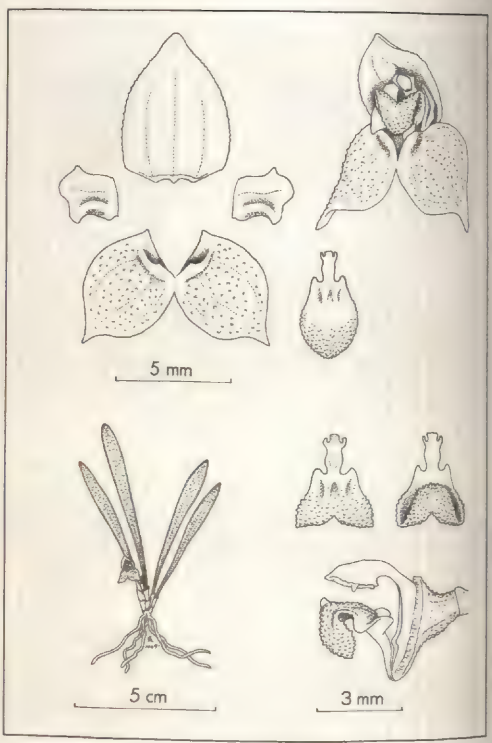

Fig. 45. Dryadella verrucosa

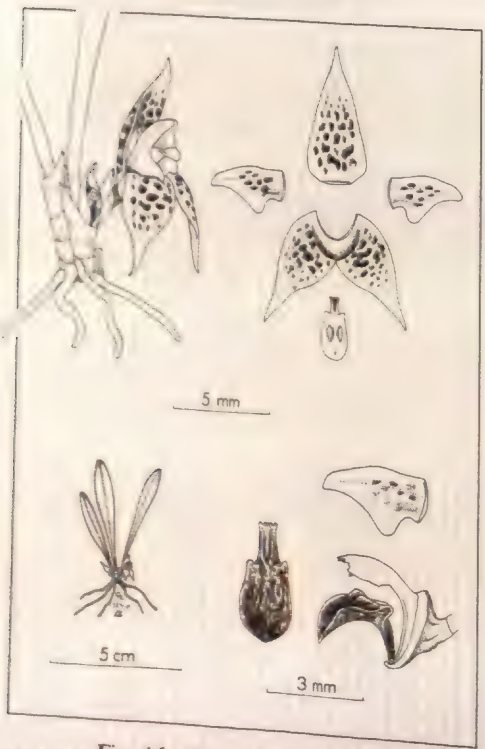

Fig. 46. Dryadella vitorinoi

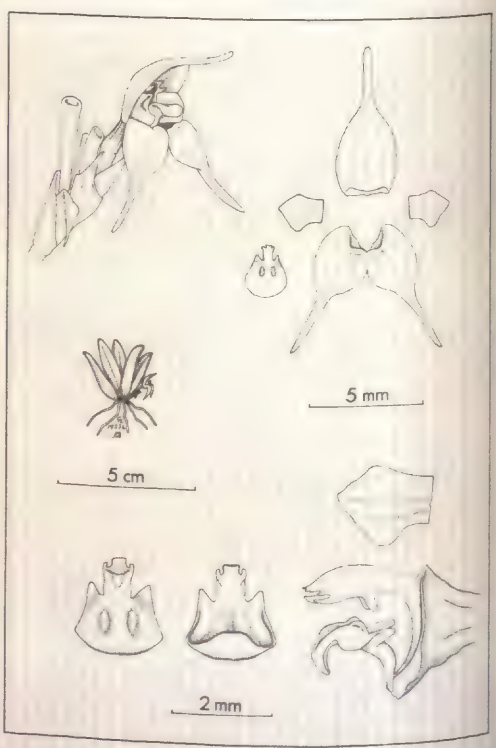

Fig. 47. Dryadella werneri

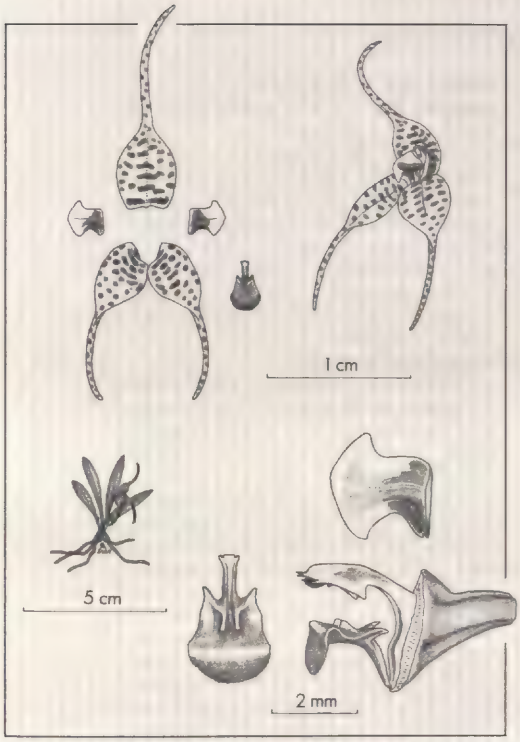

Fig. 48. Dryadella wuerstlei

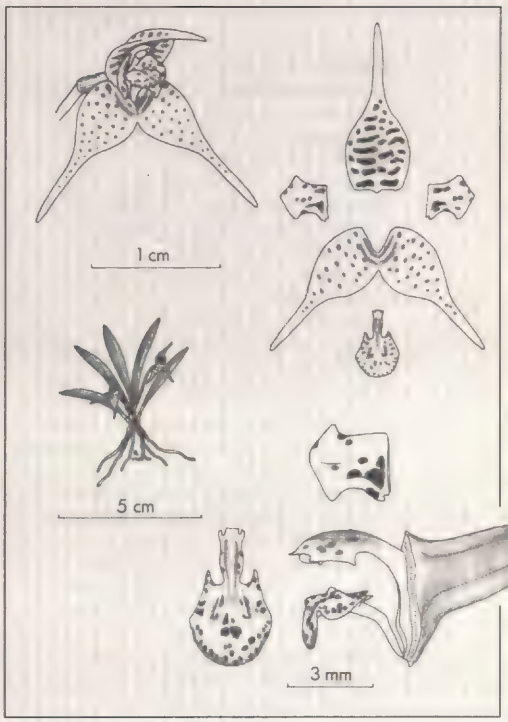

Fig. 49a. Dryadella zebrina

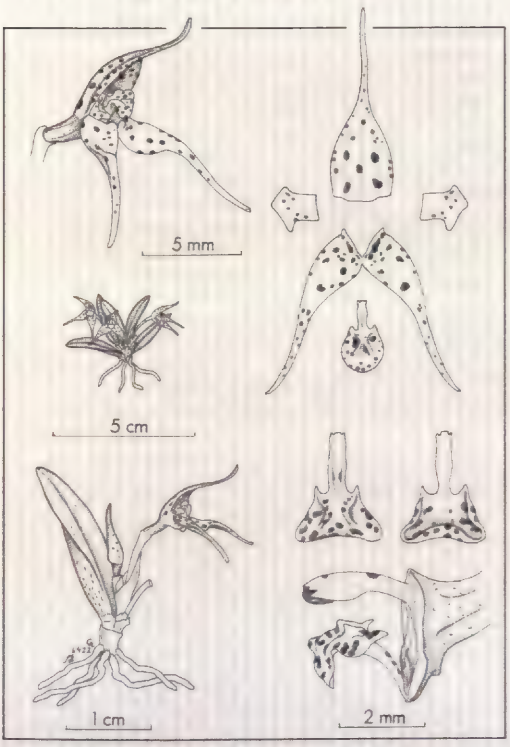

Fig. 49b. Dryadella zebrina

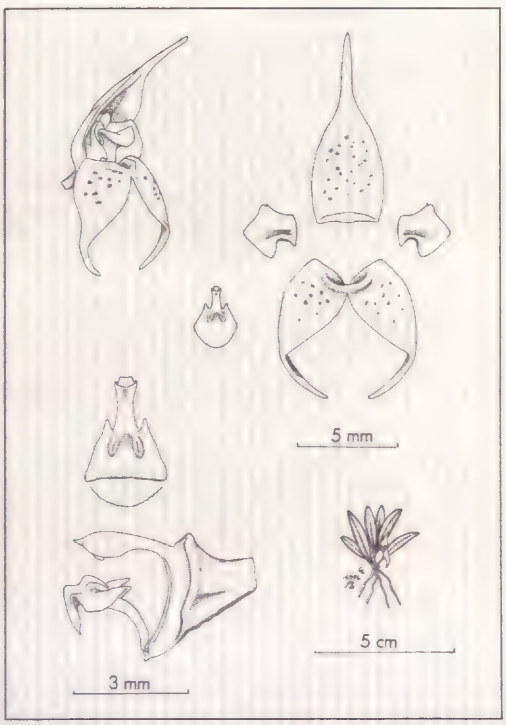

Fig. 49c. Dryadella zebrina

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SYSTEMATICS OF *ACRONIA* SECTION *MACROPHYLLAE-FASCICULATAE*

ABSTRACT

The resurrection of *Acronia* C.Presl is proposed by uniting *Pleurothallis* subsection *Acroniae* and subsection *Macrophyllae-Fasciculatae*. *Acronia* section *Acroniae* with two series was treated in Icones XX, and section *Macrophyllae-Fasciculatae* follows here. As proposed, *Acronia* consists of three sections: *Acroniae*, *Amphigyae* (one of the two series) and *Macrophyllae-Fasciculatae*. Each species of sect. *Macrophyllae-Fasciculatae* is described and illustrated.

New taxa in **Acronia** sect. **Macrophyllae-Fasciculatae**:

A. andreettae Luer, new species
A. angustissima Luer & Hirtz, new species
A. baezensis Luer & Hirtz, new species
A. braidiana Luer, new name for *Pleurothallis cardiocrepis* Braid, not Rchb.f.
A. bulbosa Luer & R.Escobar, new species
A. carduela Luer, new species
A. chaparensis Luer & Vásquez, new species
A. cordata subsp. **rhopalocarpa** (Schltr.) Luer, new combination
A. cordata subsp. **trachysepala** (Kraenzl.) Luer, new combination
A. culpameae Luer, new name for *Pleurothallis privigna* Luer
A. cuzcoensis Luer, new name for *Pleurothallis juninensis* var. *subaequisepala*
A. diazii Luer & Endara, new species
A. dracuncula Luer & Hirtz, new species
A. escobarii Luer, new species
A. folsomii Luer & Endara, new species
A. fonnegrae Luer & Endara, new species
A. hawkinsii Luer & Endara, new species
A. hispidula Luer & R.Escobar, new species
A. homeroi Luer & Endara, new species
A. iris Luer & Endara, new species
A. llanganatensis Luer & Hirtz, new species
A. lutheri Luer & Endara, new species
A. microcardia subsp. **cubitoria** (Luer) Luer, new combination
A. microcardia subsp. **tamaensis** (Foldats) Luer, new combination
A. orygmoglossa Luer & Dressler, new species
A. robusta Luer & Hirtz, new species
A. rutrifolia Luer & Hirtz, new species
A. solomonii Luer, new species
A. suinii Luer, new species
A. tandapiensis Luer & Hirtz, new species

New combinations in **Acronia** from *Pleurothallis* subsect. *Acroniae* and subsect. *Amphygiae*:

A. allenii (L.O.Williams) Luer, comb. nov.
Bas.: *Pleurothallis allenii* L.O.Williams, Ann. Missouri Bot. Gard. 27: 275, 1940.
A. alvaroi (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis alvaroi* Luer & R.Escobar, Orquideología 14: 122, 1981.
A. amphigya (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis amphigya* Luer & R.Escobar, Orquideología 14: 128, 1981.
A. ankyloglossa (Luer & Hirtz) Luer, comb. nov.
Bas.: *Pleurothallis ankyloglossa* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 79: 127, 2000.
A. annectens (Luer) Luer, comb. nov.
Bas.: *Pleurothallis annectens* Luer, Selbyana 3: 240, 1977.
A. archicolonae (Luer) Luer, comb. nov.
Bas.: *Pleurothallis archicolonae* Luer, Selbyana 3: 52, 1976.
A. bucranon (Luer & Hirtz) Luer, comb. nov.
Bas.: *Pleurothallis bucranon* Luer & Hirtz, Lindleyana 3: 134, 1988.
A. cauda-hirundinis (Luer & J.J.Portilla) Luer, comb. nov.
Bas.: *Pleurothallis cauda-hirundinis* Luer & J.J.Portilla, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 107, 2002.
A. cauda-phocae (Luer & Hirtz) Luer, comb. nov.
Bas.: *Pleurothallis cauda-phocae* Luer & Hirtz, Lindleyana 3: 137, 1988.
A. dentipetala (Rolfe ex Ames) Luer, comb. nov.
Bas.: *Pleurothallis dentipetala* Rolfe ex Ames, Sched. Orchid. 3: 7, Jan. 1923.
A. drewii (Luer) Luer, comb. nov.
Bas.: *Pleurothallis drewii* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 79: 127, 2000.
A. dukei (Luer) Luer, comb. nov.
Bas.: *Pleurothallis dukei* Luer, Lindleyana 12: 45, 1997.
A. forceps-cancri (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis forceps-cancri* Luer & R.Escobar, Orquideología 14: 144, 1981.
A. fugax (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis fugax* Luer & R.Escobar, Orquideología 14: 146, 1981.
A. glochis (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis glochis* Luer & R.Escobar, Orquideología 14: 150, 1981.
A. gomezii (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis gomezii* Luer & R.Escobar, Orquideología 20: 62, 1996.
A. gracilipedunculata (Foldats) Luer, comb. nov.
Bas.: *Pleurothallis gracilipedunculata* Foldats, Acta Bot. Ven. 3: 374, 1968.

A. habenula (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis habenula* Luer & R.Escobar, Orquideología 14: 152, 1981.
A. hammellii (Luer) Luer, comb. nov.
Bas.: *Pleurothallis hammellii* Luer, Lindleyana 12: 48, 1997.
A. imitor (Luer) Luer, comb. nov.
Bas.: *Pleurothallis imitor* Luer, Lindleyana 11: 78, 1996.
A. knappii (Luer) Luer, comb. nov.
Bas.: *Pleurothallis knappii* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 79: 128, 2000.
A. languida (Luer) Luer, comb. nov.
Bas.: *Pleurothallis languida* Luer, Orquideología 21: 95, 1998.
A. lobata (Luer) Luer, comb. nov.
Bas.: *Pleurothallis lobata* Luer, Orquideología 20: 214, 1996.
A. longipedicellata (Ames & C.Schweinf.) Luer, comb. nov.
Bas.: *Pleurothallis longipedicellata* Ames & C.Schweinf., Sched. Orch. 8: 27, 1925.
A. lopezii (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis lopezii* Luer & R.Escobar, Orquideología 21: 102, 1998.
A. luctuosa (Rchb.f.) Luer, comb. nov.
Bas.: *Pleurothallis luctuosa* Rchb.f., Linnaea 41: 48, 1877.
A. nox-media (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis nox-media* Luer & R.Escobar, Orquideología 21: 104, 1998.
A. orecta (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis orecta* Luer & R.Escobar, Orquideología 20: 75, 1996.
A. pallida (Luer) Luer, comb. nov.
Bas. *Pleurothallis pallida* Luer, Selbyana 3: 358, 1977.
A. polysticta (Luer) Luer, comb. nov.
Bas.: *Pleurothallis polysticta* Luer, Selbyana 5: 176, 1979.
A. pseudopogon (Luer & Hirtz) Luer, comb. nov.
Bas.: *Pleurothallis pseudopogon* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 30, 1998.
A. quadricaudata (Schltr.) Luer, comb. nov.
Bas.: *Pleurothallis quadricaudata* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 112, 1920.
A. quaternaria (Luer) Luer, comb. nov.
Bas.: *Pleurothallis quaternaria* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 31, 1998.
A. ramosii (Luer) Luer, comb. nov.
Bas.: *Pleurothallis ramosii* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 32, 1998.
A. rowleei (Ames) Luer, comb. nov.
Bas.: *Pleurothallis rowleei* Ames, Sched. Orch. 1: 11, 1922.
A. sagittilabia (Luer) Luer, comb. nov.
Bas.: *Pleurothallis sagittilabia* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 32, 1998.
A. sanluisii (Foldats) Luer, comb. nov.
Bas.: *Pleurothallis sanluisii* Foldats, Acta Bot. Ven. 3: 390, 1968.
A. sextonii (Luer) Luer, comb. nov.
Bas.: *Pleurothallis sextonii* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 108, 2002.
A. simulans (L.O.Williams) Luer, comb. nov.
Bas.: *Pleurothallis simulans* L.O.Williams, Ann. Missouri Bot. Gard. 27: 281, 1940.
A. sobrina (Luer & Hirtz) Luer, comb. nov.
Bas.: *Pleurothallis sobrina* Luer & Hirtz, Lindleyana 11: 185, 1996.
A. somnolenta (Luer) Luer, comb. nov.
Bas.: *Pleurothallis somnolenta* Luer, Orquideología 20: 225, 1996.
A. stevensonii (Luer) Luer, comb. nov.
Bas.: *Pleurothallis stevensonii* Luer, Selbyana 1: 296, 1975.
A. stricta (Luer) Luer, comb. nov.
Bas.: *Pleurothallis stricta* Luer, Selbyana 5: 181, 1979.
A. supervacanea (Rchb.f.) Luer, comb. nov.
Bas.: *Pleurothallis supervacanea* Rchb.f., Hamburger Garten-Blumenzeitung 16: 180, 1860.
A. tetrachaeta (Luer & Hirtz) Luer, comb. nov.
Bas.: *Pleurothallis tetrachaeta* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 35, 1998.
A. tipuloides (Luer) Luer, comb. nov.
Bas.: *Pleurothallis tipuloides* Luer, Phytologia 54: 388, 1983.
A. tryssa (Luer) Luer, comb. nov.
Bas.: *Pleurothallis tryssa* Luer, Selbyana 1: 303, 1975.
A. vieirae (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Pleurothallis vieirae* Luer & R.Escobar, Orquideología 14: 182, 1981.
A. volcanica (Luer) Luer, comb. nov.
Bas.: *Pleurothallis volcanica* Luer, Selbyana 3: 406, 1977.
A. wigginsii (C.Schweinf.) Luer, comb. nov.
Bas.: *Pleurothallis wigginsii* C.Schweinf., Amer. Orch. Soc. Bul. 17: 494, 1948.

ACRONIA C.Presl

Acronia C.Presl, Rel. Haenk. 1: 103, 1827.
Type: *Acronia phalangifera* Presl

In Icones III and Icones XVII *Pleurothallis* section *Pleurothallis* had been subdivided into six subsections: *Acroniae, Antenniferae, Longiracemosae, Macrophyllae-Fasciculatae, Macrophyllae-Racemosae* and *Pleurothallis* (Luer, 1986, 1998). All are related, the differences relying on important key characters. Subsections *Acroniae* and *Macrophyllae-Fasciculatae* are most closely allied with well-developed ramicauls with a terminal inflorescence and a sessile leaf. They also share a short column with an apical anther and an apical stigma that is transverse or transversely bilobed. These two subsections from *Pleurothallis* with series *Amphigyae* (Luer, 1998) are united into *Acronia* as three sections, the other sections remaining in *Pleurothallis*.

ACRONIA SECTION *ACRONIA*

Acronia sect. **Acronia** C.Presl.
Type: *Pleurothallis phalangifera* C.Presl.
Syn.: *Pleurothallis* subsect. *Acroniae*, Icones XVII, p. 5.

ACRONIA SECTION *AMPHYGIA*

Acronia sect. **Amphygia** Luer, stat. nov.
Type: *Pleurothallis amphygia* Luer & R.Escobar.
Syn.: *Pleurothallis* series *Amphygiae*, Icones XVII, p. 5.

ACRONIA SECTION *MACROPHYLLAE-FASCICULATAE*

Acronia sect. **Macrophyllae-Fasciculatae** (Lindl.) Luer, stat. nov.
Bas.: *Pleurothallis* subsect. *Macrophyllae-Fasciculatae* Luer, Lindleyana 3: 133, 1988.
Type: *Pleurothallis grandiflora* Lindl.
Ety.: From the Greek *macrophyllon*, "large leaf," and the Latin *fasciculatus*, "fasciculate," referring to the clustered, 1-flowered inflorescences.

Syn.: *Pleurothallis* subgen. *Pleurothallis* sect. *Macrophyllae-Fasciculatae* Lindl., Folia Orchid. *Pleurothallis* 9, 1859.

Syn.: *Pleurothallis* subsect. *Grandiflorae* Lindl., Folia Orchid. *Pleurothallis* 9, 1859.
Lectotype: *Pleurothallis grandiflora* Lindl.

Syn.: *Pleurothallis* subsect. *Parviflorae* Lindl., Folia Orchid. *Pleurothallis* 10, 1859.
Lectotype: *Pleurothallis cordata* (Ruiz & Pav.) Lindl.
Ety.: From the Latin *parviflorus*, "small-flowered," for obvious reason.

Syn.: *Erectorostrata* Brieger, Die Orchideen 428, 1975, nom. nud.
Type: *Pleurothallis cordata* (Ruiz & Pav.) Lindl.
Ety.: From the Latin *erectrorostratus*, "with erect rostrum," referring to the column.

Syn.: *Pleurothallis* subsect. *Cardiostolae* Luer, Lindleyana 3: 133, 1988.
Type: *Pleurothallis cardiostola* Rchb.f.
Ety.: From the Greek *cardiostoli*, "heart-ornament," in allusion to the heart-shaped leaf.

Syn.: *Zosterophyllanthos* Szlach. & Marg., Polish Botanical Journal 46(2): 118, 2001.
Type: *Pleurothallis grandiflora* Lindl.
Ety.: From Greek words meaning "girdled, leaf, and flower."

Plants perennial, small to large, weak to robust, epiphytic, lithophytic to terrestrial, caespitose to repent, erect to pendent; rhizome very short to elongate between aerial stems (ramicauls); roots few to many, slender to coarse or fleshy; ramicauls ascending, erect to suberect, nonprolific or rarely prolific, non-pseudobulbous, usually longer than the leaf, slender to stout, terete to rarely compressed, unifoliate, with a tubular sheath below the middle, the inflorescence emerging from the apex with the abscission layer at the base of the leaf. **Leaf** erect, suberect, spreading or deflexed, thinly to thickly coriaceous, elliptical, linear to ovate, the apex acute to obtuse, shallowly notched with a mucro in the sinus, the base sessile, rounded, subcordate to deeply cordate. **Inflorescence** a solitary, successive flower, or a few to many simultaneous, shorter than the leaf, the peduncle slender to stout, emerging with a spathe, small to large and foliaceous, floral bracts tubular, pedicels longer or shorter than the floral bract; ovary trivalvate, with or without crests, pubescence or verrucae, deciduous; the flowers resupinate or non-resupinate, variously colored; **sepals** membranous to fleshy, with or without carinae, glabrous, pubescent or verrucose, the dorsal sepal nearly free, the lateral sepals connate into an ovate, variously concave synsepal, acute, acuminate to obtuse, sometimes with a mentum; **petals** membranous to fleshy, smooth, papillose, ciliate or fringed, broadly to narrowly ovate or obovate, acute, obtuse to acuminate; **lip** membranous to fleshy, smooth, callous, papillose, ciliate or fringed, entire, usually with a well-developed glenion, the base variously attached to a short or vestigial column-foot, hinged or inflexibly adnate; **column** semiterete, short, stout, unhooded, wingless, the anther apical, the stigma apical, transverse or bilobed, the pollinia 2, pyriform with caudicles.

Acronia section *Macrophyllae-Fasciculatae*, one of the largest taxa within the Pleurothallidinae, is related to several other taxa that had customerily resided within the great, polyphyletic genus *Pleurothallis*. This group is often affectionately referred to as "the frogs," because of the fancied appearance of the flower sitting upon the leaf.

This taxon of numerous, basically similar species, was first recognized as a section of *Pleurothallis* by Lindley (1859), and modified much later by Luer (1986, 1998). Recently (Luer 1998, 1999), it was proposed as a subsection of *Pleurothallis*, a level in common with four other interrelated subsections: *Acroniae* (C.Presl) Luer, *Antenniferae* Luer, and *Macrophyllae-Racemosae* (Lindl.) Luer. Because of most closely related vegetative and floral morphology, *Macrophyllae-Fasciculatae* is united here with the two series of *Acroniae* as three sections of *Acronia*. Superficially similar vegetatively to *Acianthera* Scheidw., *Acronia* is characterized by a single-flowered or racemose inflorescence that emerges from the apex of the ramicaul at the base of a sessile leaf. Also superficially similar florally, both genera are characterized by a free dorsal sepal, connate lateral sepals, and frequently denticulate petals. The lip of *Acianthera* is thick, more or less verrucose at the apex, channeled medially between a pair of calli, and truncate at the base that is often bilobulate, as often seen in *Specklinia* Lindl. The lip of *Acronia* often has a glenion near the base, and is more or less cordate below the middle or at the base that is never bilobulate. The column of *Acianthera* is semiterete, longitudinally winged, with the anther more or less ventral with a ventral, unilocular stigma. The column of *Acronia* is short and wingless with an apical anther and stigma that is transverse or frequently bilobed as seen in *Stelis*.

The first species attributable to section *Macrophyllae-Fasciculatae* was described from Peru as *Humboldtia cordata* by Ruiz and Pavón in 1798. Willdenow transfered it to *Stelis* in 1805, and Lindley transfered it to *Pleurothallis* in 1830. Criteria for the pleurothallid genera were not well-defined in the early years of the nineteenth century. The next earliest species attributed to this section were described in 1935 (*Pleurothallis discoidea* by Lindley from Trinidad and *P. undulata* by Poeppig and Endlicher from Peru). Two more were added in 1836 by Lindley (*P. grandiflora* Ecuador, and *P. scabrilinguis* from Peru). Klotzsch described *P. tridentata* from Venezuela in 1840. In 1846, Lindley added *P. bivalvis, P. ruberrima* and *P. semiscabra* from Venezuela, Colombia and Venezuela respectively.

Reichenbach began adding species now attributable to this section in 1849 with *P. ionantha* [=*P. tridentata*] and continued in 1854 with *P. cardiostola, P. cardium* [=*P. bivalvis*] and *P. coriacardia*. His final total was 15 for the section.

Lindley proposed this taxon as section *Macrophyllae-Fasciculatae* in his *Folia Orchidacea* of *Pleurothallis* in 1859. In the introduction on the first page, he indicated "section" for his subdivisions, and on the next page he qualified section *Macrophyllae-Fasciculatae* with fleshy, cordate leaves and fasciculate flowers. He divided 18 species into two categories we shall term "subsections." His criteria for subsection *Grandiflorae* with seven species were: gaping flowers more than half an inch long (ca. 12 millimeters) and with longer, filiform pedicels. Subection *Parviflorae* with the remaining species was characterized simply by "smaller" flowers with pedicels "not very" long.

The two further divisions of his *Pleurothallis* subsection *Parviflorae*, based on petals either elongate and acuminate, or small and linear, are of no value. Even his delimitations of the two subsections are too vague for practical use. The sizes of the flowers of many species are variable, there being too many species with flowers intermediate between "large" and "small." In fact, the flowers of most species are "intermediate" in size. This sameness of the usually small, unattractive flowers has caused this section to be shunned by both amateur and professional botanists.

The majority of the species are recognizable with some distinct and stable morphological feature, but several widely distributed "species" are variable, and surrounded by a multitude of other "species" that are too similar to distinguish. These "species complexes" include *Acronia bivalvis, A. cordata, A. discoidea, A. linguifera, A. phyllocardioides* and *A. tridentata*. Although individuals may appear distinctly different, because of colors and combinations of trivial details, they are the same when the basic morphology is considered. The morphology of the flower of *A. bivalvis* is considered the "standard" from which all others deviate. Those flowers with minor deviations constitute the "complex," while those with significant, recognizable difference are recognized as species. The basic "standard" floral pattern is the same in the *A. bivalvis*-complex and in the *A. cordata*-complex. All the flowers of the latter are small with the dorsal sepal less than ten millimeters long, while the dorsal sepal of the former varies from five to 16 millimeters. The most obvious difference between the two complexes is the broadly ovate, deeply cordate leaf of the latter.

The section *Macrophyllae-Fasciculatae* in *Acronia* is characterized by sessile leaves and single flowers with connate lateral sepals. Except for one long-repent species (*A. reptans*), the habit is caespitose. The leaves are commonly cordate at the base, and are held erect, spreading or deflexed by well-developed ramicauls. Sometimes the ramicauls are slightly compressed near the leaf, but only with sharp edges in one species (*A. compressa*). The single-flowered *Ancipitia* (Luer) Luer is distinguished by compressed ramicauls. Besides a basal sheath or two, only one tubular sheath is borne, usually on the lower half of the ramicaul. Leaves of immature plants are erect, elliptical, acute, petiolate, and borne by shorter ramicauls, mimicing the habit of *Masdevallia* Ruiz & Pav. or *Scaphosepalum* Pfitzer.

Two subsections of *Pleurothallis* were proposed (Luer, 1988), based on a character of the leaf: those species with erect or spreading leaves (subsection *Macrophyllae-Fasciculatae*) as opposed to those species with descending or perpendicu-

lar leaves concave or conduplicate at the base (subsection *Cardiostolae*), but these two taxa are included together here in section *Macrophyllae-Fasciculatae* because of indistinct or overlapping boundaries.

The flowers of all the species now recognized in *Acronia* section *Macrophyllae-Fasciculatae* are terminal and produced singly and successively, or singly and simultaneously in a fascicle at the base of the leaf, from the apex of the ramicaul. The inflorescence is subtended by a sheath or spathe which is most often inconspicuous, lying in the groove on the dorsum of the leaf. However, in a significant number of species, the spathe is larger, broad and erect. Within the spathe one or many abbreviated peduncles originate, and most remain hidden. The inflorescence appears to be an extremely shortened, successively flowered raceme. From these peduncles the solitary pedicels rise with their floral bract to emerge from the spathe and bear the flower on top of the base of the leaf. Sometimes the pedicel is elongate so that the flower droops over the side of the leaf (as in *A. ruberrima*). The ovary varies in size, but it is always terete and triloculate, and usually smooth (rarely verrucose or papillose as in *A. canaligera*).

The sepals vary in color, consistency and integument, but the basic morphology is the same throughout the section. The usually erect dorsal sepal is free from the lateral sepals that are always connate into a synsepal. The synsepal and dorsal sepal are more or less similar, and spread to form a bilabiate flower. The number of veins of the dorsal sepal is not constant within some concepts treated as a species. The number of veins of the dorsal sepal of the type of *Acronia bivalvis* is three with a pair of incomplete accessory veins, three or five veins being accepted in this and some other concepts.

The petals vary from membranous to fleshy, and narrowly linear to broadly elliptical or ovate. They are not lobed except for occasional minor extensions of the margins at the base. The integument varies from smooth to pubescent or verrucose, with the margins entire, denticulate, or fimbriate. The venation is varied, even rarely reticulated.

The lips of all the species are basically similar, being three-veined, but they are subject to numerous modifications, but only rarely with indistinct, lateral lobes, never lobulate at the base. The shape varies from transverse to oblong, concave to convex. The degrees of recurving of the margins cause the lip to appear obovate, panduriform, or pyriform. Sometimes the sides are involute or revolute to form a tube. The margins vary from smooth, denticulate, to fimbriate. The base is more or less truncate and flattened or concave on the end which is held in apposition against the broad base of a thickened column-foot. The articulation is not readily motile. Uncommonly, the lip is solidly fixed in its position. The disc varies from smooth to verrucose, or spiculate. A circular structure, the glenion, is often well-demarcated at the base of the disc beneath the rostellum of the column, as seen in *Brachionidium* Lindl., *Lepanthopsis* (Cogn.) Ames, and *Stelis* Sw., as well as *Acronia*.

The column is short and wingless with the gynostemium rarely elongate (as in *Acronia giraffa*). The stigma is apical and transverse or transversely bilobed (dumbbell-shaped) as it is in *Brachionidium*, *Lepanthopsis*, *Platystele*, as well as in most species of *Stelis*. In almost all cases, there is connecting stigmatic tissue between the lobes beneath the rostellar flap. As in *Stelis*, the lobes of the stigma are sometimes confluent into a transversely oblong stigma. The column-foot is usually

merely a thickening at the base, called "obsolescent," but in rare instances a foot longer than the gynostemium has developed (as in *A. correllii*). Sometimes the base or foot is pubescent. Sometimes it is convex or "bulbous" to accommodate a cavity at the base of the lip, similar to the articulation seen in *Barbosella* and *Crocodeilanthe*. The nonhooded clinandrium is apical with a detachable anther cap covering a pair of "tear drop-shaped" pollinia joined at their pointed tips with a viscidium that protrudes forward over the isthmus between the two lobes of the stigma.

The distinction between the single-flowered species of section *Macrophyllae-Fasciculatae* and the single-flowered species of section *Amphigyae* is not always obvious. Section *Amphigyae* differs with usually more elongated peduncles, a variously lobed lip, and a more cylindrical column, the flowers closely resembling those of the racemose section *Acroniae*.

The identification of species of section *Macrophyllae-Fasciculatae* has been most troublesome in those with early names by Lindley and Reichenbach, and later names by Schlechter, especially those with destroyed or inadequate types. As would be expected, the species described by Lindley and Reichenbach are some of the most common species, but matching these old collections with recent collections is still uncertain in some instances. Identification of many species remains unclear. Even when a flower of an extant type is hydrated, identification with a recent collection is not always conclusive.

Many species of this large section are found frequently in suitable, humid forests from low to high altitudes from southern Mexico through Central America and the Andes to the Guyanas and to central Bolivia. Strangely, no species collected by Humboldt and Bonpland was described by Kunth. Strangely, no species occurs in Paraguay, Uruquay, Argentina, nor in Brazil south of its northernmost mountains. As in other pleurothallid genera, many species are local, known from only one isolated area. The majority of these local species are distinct and readily recognized. Several widely distributed, frequent and variable taxa difficult to distinguish are treated as "super-species," or "species-complexes."

About 38 species are known from Mexico to Panama. Only one common, widely distributed and variable species (*Acronia discoidea*) is found in the Antilles (Jamaica and Trinidad), and it is also the only one found within Brazil, but in Amazonian Brazil near the border with Guyana in the far north. To date, about 250 species attributable to this section have been described, about 213 treated here as species. Several species exist only as Schlechter's descriptions, the holotypes having been destroyed at Berlin during the closing days of World War II. No duplicate material has been discovered.

After 30 years of collecting, illustrating, and examining numerous collections and types, every described species still cannot be accounted for. The vast majority of the known species are now identified, and the few missing species will be included without illustrations. However, this work is incomplete, there being innumerable collections in many herbaria that are vegetatively similar to species figured here, but with flowers absent, or not yet identified. For example, many large specimens with broad, deeply cordate leaves are commonly identified as "Pleurothallis cordata," but only a fraction of these identifications are correct.

PUBLISHED NAMES ATTRIBUTABLE TO *ACRONIA* SECTION *MACROPHYLLAE-FASCICULATAE*

Acronia acestrophylla (Luer) Luer ..... Fig. 1.
Pleurothallis acostae Schltr. [=**A. phyllocardioides**]
A. acutilabia (Luer) Luer ..... Fig. 2.
P. acutipetala Schltr. [=**A. cardiothallis**]
A. adeleae (Luer) Luer ..... Fig. 3.
A. adelphe (Luer & Hirtz) Luer ..... Fig. 4a, 4b.
A. adonis (Luer) Luer ..... Fig. 5a, 5b, 5c.
A. aguirrei (Luer) Luer ..... Fig. 6.
A. alopex (Luer) Luer ..... Fig. 7.
A. altimonile (Luer & R.Escobar) Luer ..... Fig. 8.
A. ambyx (Luer & R.Escobar) Luer ..... Fig. 9.
A. andreettae Luer ..... Fig. 10.
P. angusta Ames & C.Schweinf. [=**A. bivalvis**]
A. angustissima Luer & Hirtz ..... Fig. 11.
P. antonensis L.O.Williams [=**A. bivalvis**]
A. apopsis (Luer) Luer ..... Fig. 12.
A. applanata (Luer & Dalström) Luer ..... Fig. 13.
P. archidiaconi Ames [=**A. bivalvis**]
A. arctata (Luer) Luer ..... Fig. 14.
A. ascera (Luer & R.Escobar) Luer ..... Fig. 15.
A. asplundii (Luer) Luer ..... Fig. 16.
A. aurita (C.Schweinf.) Luer ..... Fig. 17.
A. baezensis Luer & Hirtz ..... Fig. 18.
A. batracha (Luer & Hirtz) Luer ..... Fig. 19.
A. baudoensis (Luer & R.Escobar) Luer ..... Fig. 20.
A. belocardia (Schltr.) Luer, page 93.
A. bitumida (Luer) Luer ..... Fig. 21.
A. bivalvis (Lindl.) Luer ..... Fig. 22a, 22b, 22c, 22d, 22e, 22f, 22g, 22h.
A. blepharopetala (Schltr.) Luer ..... Fig. 23.
P. boliviana Schltr., non Rchb.f. [=**A. linguifera**]
A. bothros (Luer) Luer ..... Fig. 24.
A. bovilingua (Luer & R.Escobar) Luer ..... Fig. 25.
P. brachyblephara Schltr. = [**A. cordata** subsp. **trachysepala**]
A. braidiana Luer, new name for *P. cardiocrepis* Braid, non Rchb.f. ..... Fig. 26.
A. bucculenta (Luer) Luer ..... Fig. 27.
P. buchtienii Schltr. [=**A. linguifera**]
A. bulbosa Luer & R.Escobar ..... Fig. 28.
A. calamifolia (Luer & R.Escobar) Luer ..... Fig. 29.
A. calceolaris (Rchb.f.) Luer ..... Fig. 30.
A. callifera (C.Schweinf.) Luer ..... Fig. 31.
A. calogramma (Luer) Luer ..... Fig. 32.
A. calolalax (Luer & R.Escobar) Luer ..... Fig. 33.
A. canaligera (Rchb.f.) Luer ..... Fig. 34.
A. canidentis (Luer & R.Escobar) Luer ..... Fig. 35.
P. cardiantha Rchb.f. [=**A. bivalvis**]
A. cardiochila (L.O.Williams) Luer ..... Fig. 36.
P. cardiocrepis Braid [=**A. braidiana**]
A. cardiocrepis (Rchb.f.) Luer, p. 103.
A. cardiophylax (Rchb.f.) Luer ..... Fig. 37.
P. cardiophylla Schltr. [=**A. cordata** subsp. **cordata**]
A. cardiostola (Rchb.f.) Luer ..... Fig. 38a, 38b.
A. cardiothallis (Rchb.f.) Luer ..... Fig. 39.

Pleurothallis cardium Rchb.f. [=**A. bivalvis**]
Acronia carduela Luer ..... Fig. 40.
A. carnosa (Braid) Luer ..... Fig. 41.
A. carrenoi (Carnevali & I.Ramírez) Luer ..... Fig. 42.
A. cassidata (Luer & R.Escobar) Luer ..... Fig. 43.
A. cedrinorum (Luer & Dalström) Luer ..... Fig. 44a, 44b.
P. chachatoynsis Schltr. [=**A. microcardia**]
A. chama (Luer) Luer ..... Fig. 45.
A. chaparensis Luer & Vásquez ..... Fig. 46.
P. chanchamayoensis Schltr. [=**A. bivalvis**]
A. chavezii (Luer) Luer ..... Fig. 47.
P. choroniensis Schnee [=**A. cardiostola**]
A. cobriformis (L.O.Williams) Luer ..... Fig. 48.
A. complanata (Luer & Hirtz) Luer ..... Fig. 49.
A. compressa (Luer) Luer ..... Fig. 50.
P. concaviflora C.Schweinf. [=**A. excavata**]
A. conicostigma (Luer) Luer ..... Fig. 51.
A. constricta (Luer & R.Escobar) Luer ..... Fig. 52.
A. convexa (Luer & Hirtz) Luer ..... Fig. 53.
A. cordata (Ruiz & Pav.) Luer subsp. **cordata** ..... Fig. 54a, 54b, 54c, 54d.
A. cordata subsp. **rhopalocarpa** (Schltr.) Luer ..... Fig. 55a, 55b.
A. cordata subsp. **trachysepala** (Kraenzl.) Luer ..... Fig. 56.
A. cordifolia (Rchb.f. & Wagener) Luer ..... Fig. 57.
A. coriacardia (Rchb.f.) Luer ..... Fig. 58.
P. corralensis Garay [=**A. coriacardia**]
A. correllii (Luer) Luer ..... Fig. 59.
A. corysta (Luer) Luer ..... Fig. 60.
P. costaricensis Rolfe [=**A. cardiothallis**]
P. crassapex Luer [=**A. millei**]
A. crateriformis (C.Schweinf.) Luer ..... Fig. 61.
A. crossota (Luer & Dalström) Luer ..... Fig. 62.
A. crucifera (Luer & Hirtz) Luer ..... Fig. 63.
P. cubitoria Luer [=**A. microcardia** subsp. **cubitoria**]
A. culpamea Luer, new name for *P. privigna* ..... Fig. 64.
P. cundinamarcae Schltr. [=**A. microcardia** subsp. **microcardia**]
P. curvifructa H.G.Jones, page 206.
A. cutucuensis (Luer) Luer ..... Fig. 65.
A. cuzcoensis Luer, new name for *P. juninensis* var. *subaequisepala* ..... Fig. 66.
A. cyanea (Luer & R.Escobar) Luer ..... Fig. 67.
A. deflexa (Luer) Luer ..... Fig. 68.
A. dejavu (Luer & Hirtz) Luer ..... Fig. 69.
A. depressa (Luer & R.Escobar) Luer ..... Fig. 70.
A. dewildei (Luer & R.Escobar) Luer ..... Fig. 71.
A. diabolica (Luer & R.Escobar) Luer ..... Fig. 72.
A. diazii Luer & Endara ..... Fig. 73.
A. dibolia (Luer) Luer ..... Fig. 74.
A. dilemma (Luer) Luer ..... Fig. 75.
A. discoidea (Lindl.) Luer ..... Fig. 76a, 76b.
A. dorotheae (Luer) Luer ..... Fig. 77.
A. dracuncula Luer & Hirtz ..... Fig. 78.
A. dubbeldamii (Luer) Luer ..... Fig. 79.
P. embreei Luer & Hirtz [=**A. cedrinorum**]
A. ensata (Luer) Luer ..... Fig. 80.
A. epiglottis (Luer) Luer ..... Fig. 81.
P. erymnochila Luer [=**A. cordata** subsp. **A. trachysepala**]
A. erythrium (Luer) Luer ..... Fig. 82

Acronia escobarii Luer.....Fig. 83.
A. excavata (Schltr.) Luer.....Fig. 84.
Pleurothallis exserta Luer [=**A. diabolica**]
A. fantastica (Ames) Luer.....Fig. 85.
P. filifera Lindl. [=**A. macra**]
A. folsomii Luer & Endara.....Fig. 86.
A. fonnegrae Luer & Endara.....Fig. 87.
P. fornix (Luer & R.Escobar) Luer [=**A. calceolaris**]
A. fossulata (Luer & R.Escobar) Luer.....Fig. 88.
P. fuscata Braid [=**A. bivalvis**]
A. galerita (Luer) Luer.....Fig. 89.
A. ganymedes (Luer & R.Escobar) Luer.....Fig. 90.
A. gargantua (Luer) Luer.....Fig. 91.
A. geographica (Luer) Luer.....Fig. 92.
A. giraffa (Luer) Luer.....Fig. 93.
A. giraldoi (Luer) Luer.....Fig. 94.
A. glabra (Luer & R.Escobar) Luer.....Fig. 95.
A. globosa (Luer & R.Escobar) Luer.....Fig. 96.
P. gonioglossa Schltr. [=**A. sanchoi**]
P. graciliscapa C.Schweinf. [=**A. phyllocardioides**]
A. grandiflora (Lindl.) Luer.....Fig. 97a, 97b.
P. granularis Luer & R.Escobar [=**A. platysepala**]
P. harlingii Garay [=**A. bivalvis**]
A. hawkinsii Luer & Endara.....Fig. 98.
A. hemileuca (Luer) Luer.....Fig. 99.
A. hispidula Luer & R.Escobar.....Fig. 100.
A. hoeijeri (Luer) Luer.....Fig. 101.
A. homalantha (Schltr.) Luer.....Fig. 102.
P. homalanthoides Schltr. [=**A. homalantha**]
P. homeroi Luer & Endara.....Fig. 103.
P. horichii Luer [=**A. fantastica**]
P. ignivomi Schltr., new name for *P. pichinchae* Schltr. [=**A. bivalvis**]
P. imago Luer [=**A. excavata**]
A. imperialis (Luer) Luer.....Fig. 104.
A. index (Luer) Luer.....Fig. 105.
P. ionantha Rchb.f. [=**A. tridentata**]
A. iris Luer & Endara.....Fig. 106.
A. isthmica (Luer) Luer.....Fig. 107.
A. jaramilloi (Luer) Luer.....Fig. 108.
P. juninensis Schltr. [=**A. undulata**]
P. juninensis var. *angustifolia* C.Schweinf. [=**A. discoidea**]
P. juninensis var. *subaequisepala* C.Schweinf. [=**A. cuzcoensis**]
A. jupiter (Luer) Luer.....Fig. 109.
A. killipii (Garay) Luer.....Fig. 110.
A. lacera (Luer) Luer.....Fig. 111.
P. lanigera Luer [=**A. cardiostola**]
P. lansbergiana Regel [=**A. bivalvis**]
P. lansbergii Regel [=**A. bivalvis**]
A. latipetala (Garay) Luer.....Fig. 112.
A. lemniscifolia (Luer) Luer.....Fig. 113.
P. leontoglossa Schltr. [=**A. coriacardia**]
P. leptopetala Cogn. [=**A. discoidea**]
A. leucantha (Schltr.) Luer.....Fig. 114.
P. lilianiae Luer [=**A. bivalvis**]
A. lilijae (Foldats) Luer.....Fig. 115.
A. linguifera (Lindl.) Luer.....Fig. 116.

Acronia llanganatensis Luer & Hirtz ..... Fig. 117.
A. loreae (Carnevali & I.Ramírez) Luer ..... Fig. 118.
A. lunaris (Luer & R.Escobar) Luer ..... Fig. 119.
A. lutheri Luer & Endara ..... Fig. 120.
A. macra (Lindl.) Luer ..... Fig. 121.
A. macrocardia (Rchb.f.) Luer ..... Fig. 122.
A. maduroi (Luer) Luer ..... Fig. 123.
A. magnipetala (C.Schweinf.) Luer ..... Fig. 124.
Pleurothallis mariae Bock [=**A. discoidea**]
A. marthae (Luer & R.Escobar) Luer ..... Fig. 125.
A. mastodon (Luer & Hirtz) Luer ..... Fig. 126.
A. matudana (C.Schweinf.) Luer ..... Fig. 127.
P. matudiana C.Schweinf. [=**A. matudana**]
A. megaglossa (Luer & Dalström) Luer ..... Fig. 128.
A. megalorhina (Luer & R.Escobar) Luer ..... Fig. 129.
A. microcardia subsp. **microcardia** (Rchb.f.) Luer ..... Fig. 130.
A. microcardia subsp. **cubitoria** (Luer) Luer ..... Fig. 131.
A. microcardia subsp. **tamaensis** (Foldats) Luer ..... Fig. 132.
A. millei (Schltr.) Luer ..... Fig. 133.
P. monocardia Rchb.f. [=**A. cordata** subsp. **cordata**]
P. morrisii Fawc. & Rendle [=**A. discoidea**]
A. muriculata (Luer & Hirtz) Luer ..... Fig. 134.
P. nemorum Schltr. [=**A. homalantha**]
P. nephrocardia Schltr. [=**A. tridentata**]
A. nephroglossa (Schltr.) Luer ..... Fig. 135.
P. nervosa Braid [=**A. homalantha**]
A. nipterophylla (Luer) Luer ..... Fig. 136.
A. nitida (Luer) Luer ..... Fig. 137.
P. northenae Luer [=**A. latipetala**]
A. nossax (Luer & R.Escobar) Luer ..... Fig. 138.
A. obpyriformis (Luer) Luer ..... Fig. 139.
A. octavioi (Luer & R.Escobar) Luer ..... Fig. 140.
A. omoglossa (Luer) Luer ..... Fig. 141.
A. oncoglossa (Luer) Luer ..... Fig. 142.
P. opeatorhyncha Schltr. [=**A. ruberrima**]
A. ortegae (Luer & Hirtz) Luer ..... Fig. 143.
A. orygmoglossa Luer & Dressler ..... Fig. 144.
A. oxapampae (Luer) Luer ..... Fig. 145.
A. palliolata (Ames) Luer ..... Fig. 146.
A. pandurata (Luer & Hirtz) Luer ..... Fig. 147.
A. pansamalae (Schltr.) Luer ..... Fig. 148.
P. pansamalae var. *triangulabia* Correll [=**A. correllii**]
A. paquishae (Luer) Luer ..... Fig. 149.
A. peculiaris (Luer) Luer ..... Fig. 150.
A. pelicophora (Luer) Luer ..... Fig. 151.
A. penelops (Luer) Luer ..... Fig. 152.
P. perforata Luer & Hirtz [=**A. adelphae**]
A. perijaensis (Dunsterv.) Luer ..... Fig. 153.
A. peroniocephala (Luer) Luer ..... Fig. 154.
A. perryi (Luer) Luer ..... Fig. 155.
A. persimilis (Luer & Hirtz) Luer ..... Fig. 156.
P. phaeantha Schltr. [=**A. bivalvis**]
A. phyllocardia (Rchb.f.) Luer ..... Fig. 157.
A. phyllocardioides (Schltr.) Luer ..... Fig. 158a, 158b, 158c.
A. phymatodea (Luer) Luer ..... Fig. 159.
P. pichinchae Schltr. [=**A. bivalvis**]

Acronia pileata (Luer & R.Escobar) Luer .....Fig. 160.
Pleurothallis platycardium Schltr. [=**A. cordata** subsp. **trachysepala**]
A. platypetala (Luer & R.Escobar) Luer.....Fig. 161.
A. platysepala (Schltr.) Luer .....Fig. 162.
A. portillae (Luer) Luer.....Fig. 163.
P. privigna Luer & Hirtz [=**A. culpamea**]
A. prolaticollaris (Luer) Luer .....Fig. 164.
P. pulvinaris Luer & R.Escobar [=**A. platysepala**]
P. pulvinipes Schltr. [=**A. macrocardia**]
A. radula (Luer) Luer.....Fig. 165.
A. rectipetala (Ames & C.Schweinf.) Luer.....Fig. 166.
A. recurvata (Luer & Hirtz) Luer .....Fig. 167.
A. reginae (Garay) Luer, page 181.
A. reptans (Luer) Luer.....Fig. 168.
P. rhaphidopus Schltr. [=**A. phyllocardioides**]
A. rhodoglossa (Schltr.) Luer.....Fig. 169a, 169b.
P. rhopalocarpa Schltr. [=**A. cordata** subsp. **rhopalocarpa**]
A. ripleyi (Luer) Luer .....Fig. 170.
A. robusta Luer & Hirtz .....Fig. 171.
A. ruberrima (Lindl.) Luer.....Fig. 172a, 172b, 172c.
A. rubroinversa (Luer) Luer .....Fig. 173.
A. rugosa (Luer) Luer.....Fig. 174.
A. rutrifolia Luer & Hirtz .....Fig. 175.
A. saccatilabia (C.Schweinf.) Luer .....Fig. 176.
A. sanchoi (Schltr.) Luer .....Fig. 177.
A. sannio (Luer & R.Escobar) Luer.....Fig. 178.
A. sarcochila (Garay) Luer .....Fig. 179.
A. scabrilinguis (Lindl.) Luer.....Fig. 180.
P. scaphioglottis Schltr. [=**A. canaligera**]
P. scaphipetala (Luer) Luer .....Fig. 181.
P. schlechteriana Ames [=**A. cardiothallis**]
P. scitula Luer [=**A. rectipetala**]
P. scleropus Schltr. [=**A. discoidea**]
P. sculptilis Luer [=**A. stelidilabia**]
A. scurrula (Luer) Luer .....Fig. 182.
A. semiscabra (Lindl.) Luer .....Fig. 183.
A. sergioi (Luer & R.Escobar) Luer.....Fig. 184.
A. serricardia (Schltr.) Luer.....Fig. 185.
P. sigsigensis Schltr. [=**A. bivalvis**]
A. sigynes (Luer) Luer .....Fig. 186.
A. siphoglossa (Luer & R.Escobar) Luer.....Fig. 187.
P. smithii Schltr. [=**A. coriacardia**]
A. solomonii Luer .....Fig. 188.
A. sotarae (Schltr.) Luer .....Fig. 189.
A. sphaerantha (Luer) Luer .....Fig. 190.
A. stelidilabia (Luer) Luer.....Fig. 191.
A. stellata (I.Ramírez & Carnevali) Luer .....Fig. 192.
P. stenocardium Schltr. [=**A. bivalvis**]
P. stenosepala Rolfe [=**A. microcardia** subsp. **microcardia**]
A. stenota (Luer) Luer .....Fig. 193.
A. subtilis (C.Schweinf.) Luer.....Fig. 194.
P. subulata Rolfe [=**A. cardiothallis**]
P. sugdenii Luer [=**A. discoidea**]
A. suinii Luer .....Fig. 195.
P. syringifolia Kraenzl. [=**A. canaligera**]
P. tamaensis Foldats [=**A. microcardia** subsp. **tamaensis**]

Acronia tandapiensis Luer & Hirtz .....Fig. 196.
A. teaguei (Luer) Luer .....Fig. 197.
A. telamon (Luer) Luer.....Fig. 198.
A. titan (Luer) Luer .....Fig. 199.
A. tonduzii (Schltr.) Luer .....Fig. 200.
Pleurothallis trachysepala Kraenzl. [=**A. cordata** subsp. **trachysepala**]
A. tragulosa (Luer & Hirtz) Luer .....Fig. 201.
A. transversilabia (Carnevali & G.A.Romero) Luer.....Fig. 202.
P. triangulabia C.Schweinf. [=**A. phyllocardia**]
A. tridentata (Klotzsch) Luer.....Fig. 203a, 203b, 203c.
A. troglodytes (Luer) Luer .....Fig. 204.
A. tuberculosa (Luer & Hirtz) Luer .....Fig. 205.
A. tyria (Luer & Hirtz) Luer.....Fig. 206.
A. undulata (Poepp. & Endl.) Luer .....Fig. 207.
A. upanoensis (Luer & Hirtz) Luer .....Fig. 208.
A. valladolidensis (Luer) Luer .....Fig. 209.
A. variabilis (Luer) Luer .....Fig. 210
P. veraguacensis Luer [=**A. cordifolia**]
A. vinealis (Luer & R.Escobar) Luer.....Fig. 211.
A. volans (Luer & Hirtz) Luer .....Fig. 212.
P. yungasensis Rolfe [=**A. ruberrima**]
A. zarumae (Luer & Hirtz) Luer .....Fig. 213.

About the key

In order to construct a key to the species, it is necessary to divide the mass into manageable lots. A first dichotomy has customarily been the habit, which, in this section, is represented by only one truly repent species (*Acronia reptans*) and only two normally prolific species (*A. killipii* and *A. vinealis*). They will separate easily in their respective lots. Likewise, there is a sharply compressed ramicaul in only one species (*A. compressa*), and it, too, separates easily in its proper lot.

Where to begin a key to the species of this section is not obvious. The following is a totally artificial key, the result of numerous trials, and hopefully without too many ambiguities and errors. Species too close to the limits of a division, will be found in the lots on either side. Variable species will appear in more than one lot. Vaguely known species are not included in the key.

KEY TO THE LOTS

1 Mature leaf cuneate, extremely narrowly cordate, or rounded at the base.....**Lot 1**
1' Mature leaf cordate at the base.....2

2 Spathe foliaceous or conspicuous, erect or suberect.....**Lot 2**
2' Spathe inconspicuous, prone.....3

3 Dorsal sepal less than 5 mm long.....**Lot 3**
3' Dorsal sepal more than 5 mm long.....4

4 Dorsal sepal between 5 and 10 mm long.....**Lot 4**
4' Dorsal sepal more than 10 mm long.....5

5 Dorsal sepal between 10 and 20 mm long.....**Lot 5**
5' Dorsal sepal greater than 20 mm long .....**Lot 6**

KEY TO THE SPECIES OF *ACRONIA* SECTION *MACROPHYLLAE-FASCICULATAE*

LOT 1 - *Leaf cuneate to rounded at the base, or extremely narrowly cordate*

1 Plant repent ..... *A. reptans*
1' Plant caespitose 2

2 Mature leaf less than 1 cm wide 3
2' Mature leaf more than 1 cm wide 13

3 Leaf linear with sides recurved 4
3' Leaf linear to narrowly ovate without sides recurved 9

4 Synsepal concave, filled with a proportionately large lip 5
4' Synsepal not concave 7

5 Lip markedly geniculate ..... *A. subtilis*
5' Lip not geniculate 6

6 Lip triangular with prominent verrucae ..... *A. arctata*
6' Lip subquadrate without verrucae ..... *A. calamnifolia*

7 Dorsal sepal elongate with sides recurved ..... *A. angustissima*
7' Dorsal sepal not elongate with sides recurved 8

8 Lip 2.5 mm long, thickly triangular with a claw ..... *A. portillae*
8' Lip 6 mm long, oblong with recurved sides ..... *A. lemniscifolia*

9 Petals triangular, about half as long as the lip 10
9' Petals narrowly linear, as long as the lip 11

10 Leaf thickly fleshy; sepals 3-4 mm long ..... *A. sergioi*
10' Leaf not thickly fleshy; sepals 7-9 mm long ..... *A. ensata*

11 Lip channeled with a large glenion ..... *A. discoidea*
11' Lip not channeled with a large glenion 12

12 Leaf narrowly ovate; lip obpyriform, convex ..... *A. obpyriformis*
12' Leaf narrowly linear; lip oblong, shallowly concave ..... *A. acestrophylla*

13 Leaf fusiform; dorsal sepal 3 times longer than wide ..... *A. cuzcoensis*
13' Not the above 14

14 Leaf narrowly cuneate at the base 15
14' Leaf round at the base, very shallowly cordate 21

15 Leaf narrowly obovate, narrowed at the base with recurved sides .....
15' Leaf narrowly elliptical-ovate cuneate at the base ..... *A. tuberculosa*

16 Dorsal sepal 3-veined 16
16' Dorsal sepal 5- to 7-veined 17

17 Petals expanded, nearly as long as the synsepal 19
17' Petals decurved, not nearly as long as the synsepal ..... *A. upanoensis*
18

18 Petals glabrous; lip less than 4 mm long.....*A. isthmica*
18' Petals minutely denticulate; lip more than 6 mm long.....*A. megaglossa*

19 Petals triangular; lip transverse.....*A. tragulosa*
19' Not the above 20

20 Dorsal sepal orbicular; petals pubescent.....*A. platysepala*
20' Dorsal sepal elliptical; petals not pubescent.....*A. tyria*

21 Dorsal sepal cucullate, spotted.....*A. cobriformis*
21' Dorsal sepal ovate, unspotted.....22

22 Petals fimbriate or lacerate 23
22' Petals entire or minutely denticulate, erose.....24

23 Petals 1 mm wide, long-fimbriate.....*A. nitida*
23' Petals 3 mm wide, coarsely lacerate.....*A. lacera*

24 Petals concave at the apex 25
24' Petals not concave at the apex.....27

25 Petals cucullate above the middle.....*A. scaphipetala*
25' Petals dorsally carinate, not cucullate 26

26 Lip saccate with erect basal processes.....*A. excavata*
26' Lip not saccate, with erect basal angles.....*A. dorothea*

27 Petals obovate.....28
27' Petals not obovate 29

28 Petals 1.5 mm long; lip with tall, basal processes.....*A. aurita*
28' Petals 4-5 mm long; lip with short, basal processes.....*A. saccatilabia*

29 Petals minutely denticulate, erose 30
29' Petals entire.....31

30' Sepals less than 4 mm long .....*A. leucantha*
30' Sepals 5-6 mm long.....*A. sanchoi*

31 Lip with the blade triangular, acute 32
31' Lip oblong-ovate, obtuse.....33

32 Petals narrowly elliptical; lip with 2 pyramidal calli.....*A. bitumida*
32' Petals broadly elliptical; lip without calli.....*A. acutilabia*

33 Sepals narrowly ovate, more than 10 mm long.....*A. stenota*
33' Sepals ovate, less than 10 mm long.....*A. discoidea*

LOT 2 - *Leaf cordate; spathe large or conspicuous*

1 Ramicaul sharply compressed.....*A. compressa*
1' Ramicaul terete 2

2 Synsepal concave 3
2' Synsepal not concave 5

3 Synsepal concave centrally, with the sides convex.....*A. sannio*
3' Synsepal concave without the sides convex.....4

4 Synsepal deeply concave-cucullate.....*A. stelidilabia*
4' Synsepal shallowly concave.....*A. volans*

5 Synsepal reflexed 180°.....*A. penelops*
5' Synsepal not reflexed.....6

6 Lip thin, broadly concave.....*A. valladolidensis*
6' Lip not broadly concave.....7

7 Lip thick, rugose or verrucose.....8
7' Lip neither rugose nor verrucose.....13

8 Lip rugose.....9
8' Lip verrucose or papillose.....10

9 Lip transversely rugose.....*A. rugosa*
9' Lip slightly rugose surrounding a central depression.....*A. jaramilloi*

10 Lip hastate with a large glenion.....*A. diazii*
10' Lip not hastate with a large glenion.....11

11 Petals ovate, unguiculate.....*A. perijaensis*
11' Petals oblong, not unguiculate.....12

12 Dorsal sepal 3-veined.....*A. radula*
12' Dorsal sepal 5-veined.....*A. folsomii*

13 Lip acutely deflexed 180° near the middle.....14
13' Lip not deflexed.....15

14 Dorsal sepal 7- to 9-veined.....*A. latipetala*
14' Dorsal sepal 3-veined.....*A. dejavu*

15 Lip with lobe-like, lateral angles.....16
15' Lip without lobe-like, lateral angles.....18

16 Lip transverse with broad, lateral lobes.....*A. troglodytes*
16' Lip with acute lobes, not transverse.....17

17 Lateral lobes near the middle, diverging 180°.....*A. peculiaris*
17' Lateral lobes basal, retrorse.....*A. diabolica*

18 Lip entire, ovate, without demarcations.....19
18' Lip demarcated into a basal zone and an apical zone.....27

19 Lip narrowly ovate with recurved sides.....*A. altimonile*
19' Lip without recurved sides.....20

20 Petals narrowly unguiculate.....*A. lillijae*
20' Petals not narrowly unguiculate.....21

21 Lip triangular, cleft just below the apex.....*A. apopsis*
21' Lip oblong-ovate, not cleft at apex.....22

22 Lip convex above the middle, with a small glenion at the base.....*A. giraldoi*
22' Lip not convex above the middle.....23

23 Lip with a large, deep glenion.....*A. bothros*
23' Lip with a shallow glenion.....24

24 Sepals pubescent.....*A. rectipetala*
24' Sepals glabrous.....25

25 Synsepal narrowly ovate; lip acute.....*A. index*
25' Synsepal ovate; lip obtuse.....26

26 Petals about twice as long as the lip.....*A. prolaticollaris*
26' Petals slightly shorter than the lip.....*A. fonnegrae*

27 Lip with smooth, basal zones to either side of the glenion.....29
27' Lip demarcated by a low, marginal callus into a basal-central zone, and an apical-marginal zone, the disc cleft.....30

28 Dorsal sepal 9-veined.....*A. perryi*
28' Dorsal sepal 3- to 5-veined.....29

29 Mature plant large with ramicauls over 10 cm long.....*A. phyllocardia*
29' Mature plant small with ramicauls less than 10 cm long.....*A. rubroinversa*

30 Mature plant small, ramicauls less than 6 cm long.....*A. carrenoi*
30' Mature plant with ramicauls 10 to 30 or more cm long.....31

31 Synsepal broadly transverse, shorter than the dorsal sepal.....*A. ortegae*
31' Synsepal not shorter than the dorsal sepal.....32

32 Synsepal concave; petals broad, shortly unguiculate.....*A. volans*
32' Synsepal not concave; petals not unguiculate.....33

33 Synsepal with sides revolute.....*A. alopex*
33' Synsepal with sides not revolute.....34

34 Petals elliptical-ovate.....*D. cardiostola*
34' Petals thick, linear.....*A. adelphae*

LOT 3 - *Leaves cordate; sepals up to 5 mm long*

1 Ovary verrucose.....2
1' Ovary not verrucose.....4

2 Leaf convex.....*A. phymatodea*
2' Lip concave.....3

3 Lip without calli at the base.....*A. canaligera*
3' Lip concave with a pair of calli at the base.....*A. nipterophylla*

4 Dorsal sepal and synsepal deeply concave.....*A. sphaerantha*
4' Dorsal sepal and synsepal not deeply concave.....5

5 Petals carinate; lip narrowly ovate-triangular.....*A. baudoensis*
5' Petals not carinate; lip not narrowly ovate-triangular.....6

6 Petals linear, 0.25 mm wide; lip obpyriform, convex.....*A. obpyriformis*
6' Petals more than 0.25 mm wide; lip not obpyriform.....7

7 Petals 1 mm wide, denticulate; lip thick, 1.5 mm long and wide.....*A. cordata*
7' not the above 8

8 Lip concave 9
8' Lip not concave 11

9 Lip transversely oblong when expanded.....*A. transversilabia*
9' Lip not transverse.....10

10 Lip thick, obtuse, cordate when expanded.....*A. tridentata*
10' Lip deeply concave, acute .....*A. ambyx*

11 Dorsal sepal 2.5 mm long; lip ca. 1 mm long.....*A. peroniocephala*
11' Dorsal sepal more than 3 mm long; lip 1.5-2 mm long.....12

12 Lip with the glenion bilobed .....*A. rhodoglossa*
12' Lip with the glenion entire 13

13 Lip triangular, acute; column-foot elongate.....*A. correllii*
13' Lip ovate, obtuse; column-foot not elongate.....14

14 Leaf erect, flowers produced simultaneously.....*A. dibolia*
14' Leaf horizontal, flowers produced singly, successively.....15

15 Lip with deflexed base about half the length of the blade.....*A. pansamalae*
15' Lip with a short, deflexed base.....16

16 Leaf less than 5 cm long; sepals less than 4.5 mm long.....*A. phyllocardioides*
16' Leaf 7-9 cm long; sepals 4.5-5.5 mm long.....*A. hawkinsii*

LOT 4 - *Dorsal sepal 5-10 mm long (3-veined)*

1 Dorsal sepal 3-veined (rarely with a pair of faint or incomplete, accessory veins).....2
1' Dorsal sepal 5- to 7-veined 46

2 Leaves broadly ovate, obtuse, acuminate, deeply cordate at base; lip thick, ovate-subquadrate.....3
2' Not the above 5

3 Sepals minutely ciliate; petals and lip ciliate.....*A. cordata* subsp. *trachysepala*
3' Sepals glabrous; petals and lip microscopically denticulate.....4

4 Dorsal sepal obovate, round at the apex, noticeably longer than the synsepal.....
4' Dorsal sepal ovate-elliptical, subacute to obtuse at the apex, not noticeably longer than the synsepal.....*A. cordata* subsp. *rhopalocarpa*
.....*A. cordata* subsp. *cordata*

5 Leaves not broadly ovate, obtuse, acuminate; dorsal sepal elliptical-ovate, subacute to obtuse (occasionally with incomplete lateral veins); petals oblong, denticulate, longer than the lip; lip oblong, ovate, microscopically denticulate.....
5' Not the above .....*A. bivalvis*
.....6

6 Leaf more than 5 times longer than wide 7
6' Leaf less than 5 times longer than wide 8

7 Lateral sepals snow white; lip dark purple..... *A. hemileuca*
7' Not with the above colors..... *A. bivalvis (P. angusta)*

8 Flower appressed against the leaf; lip appressed against the synsepal..... 9
8' Flower not appressed against the leaf; lip not appressed against the synsepal..... 10

9 Dorsal sepal ovate, acute at the apex; lip slightly concave..... *A. applanata*
9 Dorsal sepal obovate, round at the apex; lip slightly convex..... *A. complanata*

10 Column slender, elongate, 3 mm long ..... *A. giraffa*
10' Column stout, short, less than 2 mm long 11

11 Sepals and lip with sides recurved..... *A. recurvata*
11' Sepals and lip not with sides recurved 12

12 Petals as long as the synsepal ..... *A. omoglossa*
12' Petals not as long as the synsepal..... 13

13 Petals shorter than the lip..... *A. coriacardia*
13' Petals about as long as or longer than the lip..... 14

14 Petals at least twice longer than the lip..... *A. crucifera*
14' Petals less than twice longer than the lip..... 15

15 Petals as wide as the lip..... *A. magnipetala*
15' Petals not as wide as the lip..... 16

16 Petals obovate, obtuse, apiculate..... *A. semiscabra*
16' Petals not obovate, obtuse, apiculate..... 17

17 Petals decurved, then curved upward above the middle..... 18
17' Petals not decurved and curved upward..... 19

18 Petals lobed at the base, otherwise 0.5 mm wide..... *A. mastodon*
18' Petals 1.25 mm wide with recurved margins..... *A. dubbeldamii*

19 Petals fringed below the middle..... *A. braidiana*
19' Petals not fringed only below the middle 20

20 Petals slender, less than 1 mm wide 21
20' Petals 1 mm or more wide..... 26

21 Petals 3 mm or less long, less than half as long as the synsepal..... *A. sigynes*
21' Petals 3-7 mm long; more than half as long as the synsepal..... 22

22 Plant small to medium; leaves 1-2.5 cm wide..... 23
22' Plant large; leaves 2.5-6 cm wide..... 24

23 Lip oblong-ovate, not concave..... *A. erythrium*
23' Lip ovate, concave above a transverse callus..... *A. tridentata*

24 Dorsal sepal and lip broadly ovate, obtuse.....*A. cordifolia*
24' Dorsal sepal elliptical-ovate, acute.....25

25 Lip shallowly concave and denticulate with the glenion elevated.....*A. rutrifolia*
25' Not the above.....*A. undulata*

26 Petals papillose, denticulate; lip thick, channeled centrally.....*A. blepharopetala*
26' Not the above.....27

27 Petals concave; lip deeply concave with thick margins.....*A. loreae*
27' Not the above.....28

28 Lip with a distinct claw.....29
28' Lip not with a distinct claw.....30

29 Lip lifted above the synsepal by a channeled claw.....*A. orygmoglossa*
29' Lip with claw as long as the column-foot.....*A. homeroi*

30 Lip with a high, triangular callus at the base.....*A. epiglottis*
30' Not the above.....31

31 Lip with a concave, subpyramidal callus at the base.....*A. callifera*
31' Not the above.....32

32 Lip with a thick, marginal callus on the sides near the apex.....*A. conicostigma*
32' Not the above.....33

33 Lip narrowly obpyriform.....*A. chavezii*
33' Not the above.....34

34 Lip oblong with the callus beneath the tip conspicuous.....35
34' Not the above.....36

35 Lip with the the apex rounded.....*A. millei*
35' Lip with the tip uncinate.....*A. oxapampae*

36 Lip concave beneath, convex above with shallowly demarcated lateral and apical portions.....*A. convexa*
36' Not the above.....37

37 Lip pandurate with a central pair of convexities.....*A. pandurata*
37' Not the above.....38

38 Lip with the disc irregularly wrinkled (geographic).....*A. geographica*
38' Not the above.....39

39 Lip oblong with the disc papillose-verrucose.....*A. scabrilinguis*
39' Not the above.....40

40 Lip ovate, thick, shallowly channeled, arcuate.....41
40' Not the above.....42

41 Petals glabrous.....*A. matudana*
41' Petals denticulate.....*A. tandapiensis*

42 Lip with obtuse, marginal angles above a truncate base.....*A. omoglossa*
42' Not the above.....43

43 Lip with the glenion bilobed ..... *A. rhodoglossa*
43' Lip with the glenion entire 44

44 Lip wider than long ..... *A. hawkinsii*
44' Lip longer than wide 45

45 Petals linear, acute, longer than the lip..... *A. undulata*
45' Petals narrowly triangular, shorter than the lip..... *A. coriacardia*

Dorsal sepal 5-10 mm long (5- to multiveined)

46 Dorsal sepal cucullate..... 47
46' Dorsal sepal not cucullate 50

47 Lip with acute lateral lobes below the middle..... *A. pileata*
47' Lip entire 48

48 Lip deeply concave ..... *A. ambyx*
48' Lip not concave 49

49 Lip with basal lobes flanking the column..... *A. globosa*
49' Lip truncate at the base..... *A. galerita*

50 Lip with large, obtuse lateral lobes, and small, channeled middle lobe.....
..... *A. fantastica*
50' Lip oblong-ovate, entire 51

51 Lip concave or with a cavity 52
51' Lip neither concave nor with a cavity 54

52 Lip broadly concave with smooth margins..... *A. pelicophora*
52' Lip not broadly concave with smooth margins..... 53

53 Sepals verrucose; lip thick, deeply concave..... *A. crateriformis*
53' Sepals smooth; lip with a shallow convexity..... *A. culpamea*

54 Petals and lip ciliate..... *A. crossota*
54' Petals and lip not ciliate 55

55 Petals 1 mm wide, 1-veined..... *A. homalantha*
55' Petals 2.6 mm wide, 3-veined ..... *A. glabra*

LOT 5 - *Dorsal sepal 10-20 mm long (3-veined)*

1 Dorsal sepal 3-veined (rarely with a pair of faint or incomplete, accessory veins)..... 2
1' Dorsal sepal 5- to multiveined 30

2 Plant normally prolific..... 3
2' Plant not normally prolific 4

3 Lip entire ..... *A. vinealis*
3' Lip spiculate ..... *A. killipii*

4 Dorsal sepal 4-5 times longer than wide 5
4' Dorsal sepal not 4-5 times longer than wide..... 8

5 Lip convex ..... *A. bulbosa*
5' Lip not convex 6

6 Lip pubescent ..... *A. hispidula*
6' Lip not pubescent 7

7 Flowers single, successive, prostrate ..... *A. microcardia* subsp. *microcardia*
7' Flowers multiple, simultaneous, nodding ..... *A. stenota*

8 Dorsal sepal at least 3 times longer than wide 9
8' Dorsal sepal less than 3 times longer than wide 11

9 Leaf broadly and very deeply cordate ..... *A. paquishae*
9' Leaf shallowly cordate 10

10 Lip large, about as wide as the synsepal ..... *A. chaparensis*
10' Lip large, but not as wide as the synsepal ..... *A. carnosa*

11 Leaf 4-5 times longer than wide 12
11' Leaf less than 4-5 times longer than wide 17

12 Leaf more or less pendent, suffused with purple ..... *A. telamon*
12' Leaf erect to horizontal, not suffused with purple 13

13 Peduncle elongate with drooping flower ..... *A. macra*
13' Peduncle not elongate with drooping flower 14

14 Lip with a tall, grooved callus at the base 15
14' Lip without a tall, grooved callus at the base 16

15 Petals minutely serrulate ..... *A. ripleyi*
15' Petals entire ..... *A. variabilis*

16 Sepals acute ..... *A. persimilis*
16' Sepals subacute to obtuse 17

17 Petals narrowly triangular ..... *A. andreettae*
17' Petals oblong ..... *A. bivalvis (P. angusta)*

18 Flower flat against the leaf; lip proportionately small, 3 mm long ..... *A. depressa*
18' Not as above 19

19 Dorsal sepal obovate; lip obovate, arcuate ..... *A. escobarii*
19' Dorsal sepal elliptical-ovate; lip not obovate, arcuate 20

20 Synsepal deeply concave ..... *A. octavioi*
20' Synsepal not deeply concave 21

21 Synsepal shorter and much wider than the dorsal sepal; lip convex at the base and acutely deflexed ..... *A. scurrula*
21' Not as above 22

22 Lip more than 10 mm long 23
22' Lip less than 10 mm long 24

23 Lip with recurved sides ..... *A. adonis*
23' Lip without recurved sides ..... *A. cardiophylax*

24 Petals shorter than the lip 25
24' Petals as long as or longer than the lip 26

25 Lip with the glenion concave between a pair of pyramidal calli ..... *A. fossulata*
25' Lip without the glenion concave ..... *A. coriacardia*

26 Lip with recurved or deflexed sides 27
26' Lip with sides neither recurved nor deflexed 28

27 Lip subquadrate with the sides decurved above the middle ..... *A. deflexa*
27' Lip oblong with the sides recurved ..... *A. baezensis*

28 Lip thick, obovate, pubescent, not convex ..... *A. dracuncula*
28' Lip ovate, not as above 29

29 Lip serrate, convex ..... *A. calogramma*
29' Lip microscopically denticulate, not convex ..... *A. bivalvis*

Dorsal sepal 10-20 mm long (5- to multiveined)

30 Leaf with basal lobes elongate, horn-like ..... *A. dilemma*
30' Leaf with basal lobes round 31

31 Peduncle elongate, drooping 32
31' Peduncle not elongate and drooping 33

32 Dorsal sepal much wider than the synsepal ..... *A. tragulosa*
32' Dorsal sepal not wider than the synsepal ..... *A. ruberrima*

33 Sepals muriculate externally; lip cleft centrally ..... *A. muriculata*
33' Sepals not muriculate externally; lip not cleft centrally 34

34 Petals acuminate 35
34' Petals not acuminate 36

35 Petals obovate, obtuse, acuminate ..... *A. platypetala*
35' Petals narrowly ovate, acute ..... *A. stellata*

36 Lip broader than long 37
36' Lip longer than broad 41

37 Lip broadly concave with callus at the base ..... *A. palliolata*
37' Lip not broadly concave 38

38 Petals and lip convex, diffusely echinate ..... *A. marthae*
38' Petals and lip not convex and diffusely echinate 39

39 Lip convex above the middle with sides decurved ..... *A. cassidata*
39' Lip shallowly concave at the glenion between a pair of calli 40

40 Dorsal sepal convex with revolute sides ..... *A. calceolaris*
40' Dorsal sepal not convex with revolute sides ..... *A. cyanea*

41 Petals triangular, acute; lip subquadrate usually with apical margins more or less thickened and incurved ..... *A. cardiothallis*
41' Not as above 42

42 Petals and lip papillose ..... *A. iris*
42' Petals and lip not papillose 43

43 Lip triangular with the acute tip incurved ..... *A. oncoglossa*
43' Lip not triangular with the tip incurved 44

44 Lip panduriform with sides and apex acutely recurved ..... *A. tonduzii*
44' Lip not panduriform with sides and apex recurved 45

45 Lip thick, elliptical, shallowly concave with elevaled margins ..... *A. solomonii*
45' Lip not shallowly concave with elevated margins 46

46 Lip thick, oblong with a pair of oval depressions below the middle ..... *A. chama*
46' Lip not with a pair of oval depressions below the middle 47

47 Lip thick, ovoid with a high inframarginal "U-shaped" callus ..... *A. hoeijeri*
47' Lip simply oblong or ovate 48

48 Lip more than 9 mm long ..... *A. macrocardia*
48' Lip less than 9 mm long 49

49 Lip with both halves convex, shallowly channeled centrally ..... *A. bucculenta*
49' Lip not with both halves convex 50

50 Petals 3-veined ..... *A. robusta*
50' Petals 1-veined 51

51 Dorsal sepal 5-veined 52
51' Dorsal sepal 7-veined 55

52 Dorsal sepal orbicular; lip hastate ..... *A. diazii*
52' Not the above 53

53 Lip ovoid, concave centrally ..... *A. adelphe*
53' Lip not concave 54

54 Petals narrowly triangular, acute ..... *A. cutucuensis*
54' Petals oblong, subacute ..... *A. folsomii*

55 Flowers yellowish brown; lip entire ..... *A. cedrinorum*
55' Flowers bright yellow; lip denticulate ..... *A. carduela*

LOT 6 - *Dorsal sepal longer than 2 cm*

1 Dorsal sepal 3-veined (occasionally with incomplete accessory veins) 2
1' Dorsal sepal with 5 or more complete veins 7

2 Dorsal sepal 4-5 times longer than wide 3
2' Dorsal sepal not 4-5 times longer than wide 5

3 Dorsal sepal less than 25 mm long ..... *A. microcardia* subsp. *microcardia*

3' Dorsal sepal more than 30 mm long 4

4 Petals filiform.....*A. microcardia* subsp. *cubitoria*
4' Petals narrowly triangular.....*A. microcardia* subsp. *tamaensis*

5 Petals smooth, narrowly triangular, 3 mm wide.....*A. canidentis*
5' Petals minutely denticulate, 1.5-2 mm wide 6

6 Lip oblong with sides decurved.....*A. sotarae*
6' Lip tubular with sides revolute .....*A. adonis*

7 Leaf ca. 10 times longer than wide; peduncle more than 2 cm long....*A. asplundii*
7' Not as above.....8

8 Peduncle elongate with drooping flower 9
8' Peduncle not elongate with drooping flower.....11

9 Synsepal wider than the middle sepal.....10
9' Synsepal about as wide as the middle sepal.....*A. zarumae*

10 Sepals fleshy, rigid, synsepal deeply cucullate.....*A. adeleae*
10' Sepals membranous, synsepal shallowly concave below middle.....*A. ruberrima*

11 Synsepal saccate at the base; lip long-unguiculate.....*A. nossax*
11' Synsepal neither saccate at the base, nor lip long-unguiculate.....12

12 Synsepal deeply cucullate.....*A. ganymedes*
12' Synsepal not deeply cucullate 13

13 Petals less than 3.5 mm wide.....14
13' Petals more than 4 mm wide 30

14 Petals narrowly triangular, acute 15
14' Petals variously oblong 20

15 Lip with recurved margins above the middle.....*A. constricta*
15' Lip without recurved margins 16

16 Lip narrowly obtuse, incurved.....*A. bovilingua*
16' Lip not narrowly obtuse, incurved 17

17 Lip convex, not concave .....*A. batracha*
17' Lip concave.....18

18 Lip with thick margins .....*A. dewildei*
18' Lip with thin margins 19

19 Dorsal sepal more than 3 cm long .....*A. titan*
19' Dorsal sepal ca. 2 cm long .....*A. calolalax*

20 Lip suborbicular, cordate at the base 21
20' Lip not suborbicular and cordate at the base.....22

21 Lip diffusely papillose .....*A. nephroglossa*
21' Lip not diffusely papillose .....*A. cardiochila*

22 Lip with sides decurved above the middle into a tube.....*A. siphoglossa*
22' Not as above.....23

23 Lip elongate with sides decurved the length of the lip....24
23' Lip not as above....25

24 Petals and lip minutely ciliate....*A. linguifera*
24' Petals and lip coarsely ciliate-pubescent....*A. serricardia*

25 Lip ovate, smooth, more than 10 mm long....26
25' Lip less than 8 mm long....27

26 Sepals more than 30 mm long....*A. sarcochila*
26' Sepals less than 23 mm long....*A. robusta*

27 Petals and lip glabrous....28
27' Petals and lip ciliate-pubescent....29

28 Lip with sides recurved above the middle....*A. corysta*
28' Lip with sides not recurved....*A. cedrinorum*

29 Lip with sides recurved above the middle....*A. jupiter*
29' Lip with sides not recurved....*A. grandiflora*

(wide petals)

30 Dorsal sepal ca. 5 cm long....*A. gargantua*
30' Dorsal sepal 2-3 cm long....31

31 Sepals shortly pubescent externally....*A. reginae*
31' Sepals glabrous externally....32

32 Lip longer than wide....33
32' Lip not longer than wide....34

33 Lip convex with sides recurved....*A. megalorhina*
33' Lip concave with sides incurved....*A. ascera*

34 Dorsal sepal not concave....*A. lunaris*
34' Dorsal sepal deeply cucullate....35

35 Petals with markedly revolute sides....*A. teaguei*
35' Petals convex without markedly revolute sides....36

36 Lip transversely reniform....37
36' Lip not transversely reniform....38

37 Lip with erect, round, basal lobes....*A. maduroi*
37' Lip without round, basal lobes....*A. llanganatensis*

38 Lip suborbicular without recurved margins....*A. suinii*
38' Lip with deeply concave recurved margins....39

39 Pedicels 4-5 cm long....*A. lutheri*
39' Pedicels 1.5-2.5 cm long....40

40 Petals visibly glabrous; lip with the apex convex....*A. imperialis*
40' Petals papillose; lip with the apex broadly rounded, recurved....*A. aguirrei*

Acronia acestrophylla (Luer) Luer, comb. nov.

Ety.: From the Greek *acestrophylla*, "leaf like a darning needle," referring to the leaf.

Bas.: *Pleurothallis acestrophylla* Luer, Selbyana 1: 224, 1975.

Syn.: *Zosterophyllanthos acestrophyllus* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant small, epiphytic, caespitose; roots slender. Ramicauls more or less horizontal to pendent, 1-7 cm long, with 2-3 close, tubular sheaths on the lower third. **Leaf** spreading or pendent, thickly coriaceous, semiterete, linear-elliptical, acute, 4-7 cm long, 0.3-0.5 cm wide, the base narrowly cuneate, sessile. **Inflorescence** a succession of single flowers, borne from a prone spathe 5 mm long, at the base of the leaf; peduncles less than 1 mm long, enclosed within the spathe; floral bracts tubular, 3 mm long; pedicels 4 mm long; ovary 2 mm long; **sepals** red-purple, glabrous, the dorsal sepal elliptical, subacute to obtuse, 3.5 mm long, 2 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal 3 mm long, 2.5 mm wide, 4-veined; **petals** dark red, linear-oblong, acute, 2.5 mm long, 0.5 mm wide; **lip** red-purple, thick, oblong-ovate, 2.25 mm long, 1.5 mm wide, with the apex broadly rounded, the disc shallowly concave, featureless, the base truncate, hinged to the column-foot; **column** stout, broadly terete, 1 mm long, 1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Pastaza**: epiphytic in the environs of Puyo, alt. 750 m, 29 July 1975, *C. Luer. G. Luer & S. Wilhelm 485* (Holotype: SEL); Mera, epiphytic on *Crescentia cujete* tree in the village, alt. ca. 1100 m, 4 Apr. 1956, *E. Asplund 20137* (S); near Puyo, alt. 1000 m, Oct. 1983, *A. Hirtz 1302* (MO). **Napo**: new road north of Archidona to Coca, alt. 1200 m, 13 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11241* (MO); between Tena and Puerto Napo, alt. 580 m, 30 May 1986, *C.H. Dodson & T.A. Dodson 16461* (MO); between Archidona and Coca, alt. 1000 m, 19 Feb. 1990, *S. Dalström & L. Årnby 1385* (MO). **Tungurahua**: near Río Negro, alt. 1200 m, 4 Mar. 1963, *C.H. Dodson & L. Thien 2320* (SEL). **Morona-Santiago**: Cordillera de Cutucú, alt. 1600 m, Nov. 1976, *M.T. Madison, E.O. Bush, E.W. Davis 3511* (SEL); above Paute dam site, alt. 1700 m, 10 July 1977, *C. Luer, J. & G. Luer & A. Andreetta 1676* (SEL); between Gualaquiza and Indanza, alt. 1600 m, 20 Apr. 1985, *G. Harling & L. Andersson 24378* (GB); along Río Calagras, *C. Luer, J. Luer, A. Hirtz & W. Flores 11871* (MO). **Zamora-Chinchipe**: above Valladolid, alt. 1900 m, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10846* (MO).
PERU: **Amazonas**: Bagua, alt. 6,560 ft., *P. Barbour 2803* (MO). **Pasco**: Oxapampa, alt. 1880 m, up Santa Clara Valley, 10 July 1967, *D.E. Bennett 2932* (SEL).

This little species, frequent in the lowlands of east central Ecuador and Peru, is characterized by the slender, semiterete leaves that are narrowly cuneate at the base. The tiny, purple flower is borne at the base of the leaf. The dorsal sepal and synsepal are obtuse and the petals are narrowly linear. The lip is thick, oblong, and not channeled.

Acronia acutilabia (Luer) Luer, comb. nov.

Ety.: From the Latin *acutilabius*, "with an acute lip," referring to the labellum.

Bas.: *Pleurothallis acutilabia* Luer, Orquideología 21(2): 116, 1999.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 4-7 cm long, with a tightly fitting tubular sheath below the middle, and another at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 4-5 cm long, 1-1.3 cm wide, the base cuneate into the sessile base. **Inflorescence** a solitary, yellow flower produced successively, borne by a peduncle 4 mm long, subtended by a spathe 4 mm long at the base of the leaf; pedicel 2.5 mm long; floral bract 2.5 mm long; ovary 2.5 mm long; **sepals** glabrous, the dorsal sepal and synsepal ovate, subacute to obtuse, concave, the dorsal sepal 4.5 mm long, 3 mm wide unexpanded, 3-veined, the lateral sepals connate into a synsepal 4.5 mm long, 3.5 mm wide, 4-veined; **petals** yellow, elliptical, acute, 4 mm long, 2 mm wide, 3-veined; **lip** yellow, triangular, acute, 2.5 mm long, 2 mm wide, with microscopically irregular margins, thickened and reflexed toward the base, the basal angles subacute, erect, the disc with a basal glenion, the base shallowly concave on the end, minutely pubescent, hinged to the base of the column-foot; column semiterete, 1.5 mm long, with the anther and the stigma apical, the foot thick.

COLOMBIA: **Chocó**: San José del Palmar, Cerro del Torrá, Río Negro below heliport, alt. 1900 m, 15 Aug. 1988, *J.E. Ramos, P.A. Silverstone-Sopkin, L.H. Ramos et al. 1225* (Holotype: CUVC; Isotype: MO).

This species, apparently endemic in the Western Cordillera of Colombia, is intermediate between sections *Acroniae* and *Macrophyllae-Fascicultae*. The short peduncle and pedicel place it better in *Macrophyllae-Fasciculatae*.

Acronia acutilabia is characterized by slender ramicauls; spreading, narrowly ovate leaves; successive flowers with a concave, obtuse dorsal sepal and synsepal; elliptical petals nearly as large; and a triangular lip with an acute apex.

Acronia adeleae (Luer) Luer, comb. nov.

Ety.: Named for Adele D'Alessandro who, with her husband Dennis, discovered this species.

Bas.: *Pleurothallis adeleae* Luer, Phytologia 49: 200, 1981.

Syn.: *Zosterophyllanthos adeleae* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant large, robust, terrestrial, caespitose; roots coarse. Ramicauls stout, erect, 25-55 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, rigidly coriaceous, elliptical-oblong, acute, shortly acuminate, 12-18 cm long, 3.5-7 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of 1-5, simultaneous, single flowers, borne from a prone spathe 2-2.5 cm long, at the base of the leaf; peduncles 5-10 mm long, enclosed within the spathe; floral bracts tubular, 5 mm long; pedicels flaccid, 3-4 cm long; ovary 6-7 mm long, cellular-verrucose; **sepals** fleshy, shiny bright dark purple externally, cellular-papillose within, with cellular-erose margins, the dorsal sepal ovate, subacute, 17-32 mm long, 12-22 mm wide, 13-veined, the lateral sepals connate into a broadly cordate, deeply concave, obtusely acuminate synsepal, 12-28 mm long, 16-30 mm wide unexpanded, 16-veined; **petals** purple above the middle, white below the middle, triangular, acute, 8-10 mm long, 3-3.25 mm wide, 3-veined, with an oblique, marginal angle above the base to accommodate the column; **lip** white, thick, cellular-papillose with cellular-erose margins, transversely ovate, 3-4 mm long, 4.75-6 mm wide, with the apex broadly rounded, minutely apiculate, the disc convex with a cental, rounded callus, the base truncate, hinged to the column-foot; **column** stout, dorsally compressed, 1 mm long, 3 mm broad, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Loja**: terrestrial on wet, grassy slopes south of Yangana, alt. 2250 m, 11 May 1981, *C. Luer, J. Luer & D. D'Alessandro 6148* (Holotype: SEL). **Azuay**: Santa Rosa near Cuenca, alt. 3000 m, Feb. 1985, *A. Hirtz 2231* (MO). **Morona-Santiago**: Cordillera del Condor, east of Guismé, alt. 1500 m, 18 Feb. 1986, *C. Luer, A. Hirtz, W. Flores & A. Embree 11915* (MO). **Zamora-Chinchipe**: Cordillera del Condor, east of Los Encuentros, alt. 1450 m, 18 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13440* (MO).
BOLIVIA: **Cochabamba**: terrestrial on road-cut, abandoned old road from Villa Tunari to Cochabamba, alt. 1700 m, 30 Jan. 1997, *C. Luer, J. Luer, R. Vásquez, D. Ric & W. Teague 18337* (MO).

This strong, robust relative of *Acronia ruberrima* grows terrestrally on fully exposed, wet, grassy hill-sides, as well as on road-cuts. It occurs on the eastern slopes of the Andes from Ecuador into Bolivia, but it has not yet been documented from Peru. Several large, showy flowers, similar to those of *A. ruberrima* but larger and fleshy, are also borne simultaneously by long, drooping pedicels. In the original collection the dark purple sepals and petals contrasted markedly with the white, convex, transverse lip, but in other localities the floral colors are less vivid.

Acronia adelphe (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Greek *adelphe*, "a sister," referring to the close relationship to *A. cardiostola*.

Bas.: *Pleurothallis adelphe* Luer & Hirtz, Lindleyana 11: 142, 1996.

Syn.: *Pleurothallis perforata* Luer & Hirtz, Lindleyana 11: 178, 1996.

Ety.: From the Latin *perforatus*, "with a hole," referring to the deep cavity of the lip.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 20-35 cm long, with a close, tubular sheath near the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 10-18 cm long, 3-7 cm wide, the base sessile, cordate, more or less concave. **Inflorescence** a dense fascicle of numerous, successive peduncles with an occasional flower, subtended by a spathe 10-20 mm long, suberect or occasionally reclining; peduncles 2-3 mm long, concealed within the sheath; floral bracts tubular, 5 mm long; pedicels 5-6 mm long, also contained within the spathe; ovary minutely verrucose, 6-7 mm long; **sepals** fleshy, flat, brown with dark brown papillae within, the dorsal sepal broadly elliptical to orbicular, 7 mm long, 5.5-7 mm wide, 7-veined, the lateral sepals connate into an ovate, obtuse synsepal, 7-8 mm long, 5-7 mm wide, 6-veined; **petals** brown, narrowly oblong, acute, 5.5 mm long, 1.5 mm wide, faintly 3-veined, microscopically subverrucose, thickly subcarinate externally along the midvein; **lip** dark brown, thick, ovate, obtuse, 3-3.35 mm long, 2.5-3 mm wide, with the apex obtuse with thickened margin, the disc with a circular cavity between a pair of obtusely angled calli, the base truncate, hinged to the column-foot; **column** stout, terete, 1 mm long, 1.5 mm broad, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **Azuay**: epiphytic near Santa Rosa near Cuenca, alt. 3000 m, Feb. 1985, *A. Hirtz 2231* (Holotype: MO), C. Luer illustr. 16238. **Morona-Santiago**: between Guamote and Macas, alt. 2900 m, Jan. 1994, *A. Hirtz 6018* (holotype of *P. perforata*: MO), C. Luer illustr. 17824.
PERU: *Pasco*: south of Oxapampa, alt. 1800 m, 30 Jan. 1979, *C. Luer & J. Luer 3825* (SEL).

This species is related to *Acronia cardiostola* from which it is distinguished by longer leaves; a smaller, sometimes prostrate spathe; and small, fleshy, brown flowers with narrow, entire, one-veined petals. The lip is similar to that of *A. cardiostola*, but smaller with a distinct, circular, central cavity.

Acronia adonis (Luer) Luer, comb. nov.

Ety.: Named for Adonis of Greek Mythology, a beautiful youth loved by Aphrodite.

Bas.: *Pleurothallis adonis* Luer, Selbyana 3: 40, 1976.

Plant large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls erect, slender to stout, 15-40 cm long, with a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate to narrowly ovate, acute, 8-15 cm long, 2-5.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, successive flower or a fascicle of 2-4 simultaneous flowers, from a reclining spathe 1-2 cm long; peduncles 2-4 mm long within the spathe; floral bracts 5-12 mm long; pedicel 10-20 mm long; ovary 5-10 mm long; **sepals** yellow, orange to purple, often suffused with purple along the 3 veins, microscopically to minutely pubescent within, the dorsal sepal elliptical-ovate, subacute to obtuse, 15-22 mm long, 8-13 mm wide, 3-veined, the lateral sepals connate into an ovate, acute to obtuse synsepal 15-21 mm long, 7-10 mm wide, 4-veined; **petals** red-purple, deflexed, narrowly linear-oblong, acute, glabrous to microscopically denticulate, 7-16 mm long, 1.5-2 mm wide, 1-veined; **lip** erect, red-purple, glabrous to cellular-glandular with the margins microscopically denticulate, oblong-tubular, subacute, with revolute sides, 9-14 mm long, 2.5-5 mm wide unexpanded, the base with a small glenion, truncate, flattened to concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 3 mm broad, the anther and bilobed stigma apical, the foot thick, 3 mm long.

ECUADOR: **Zamora-Chinchipe**: terrestrial on road-cut east of the pass between Loja and Zamora, alt. 2000 m, 5 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 454* (Holotype: SEL). **Tungurahua**: near Altar, road from Penipe, alt. 3000 m, 10 Apr. 2004, *A. Hirtz et al. 8702* (MO).
COLOMBIA: **Antioquia**: Carolina, alt. 2000 m, 29 Sept. 1884, *F.C. Lehmann 3897* (K), C. Luer illustr. 17271. **Chocó**: south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar et al. 17690* (MO).

For other representative collections of the species-complex see *A. linguifera* on pages 151, 152.

Described from Ecuador as *Acronia adonis*, this taxon forms part of the *Acronia linguifera* species-complex. It is similar to *A. linguifera* described over a century ago by Lindley (1859) from Bolivia. Most collections of the two taxa are distinct in their sympatric distributions through the Andes from Colombia into Bolivia, but some intermediate collections blur the boundaries.

Vegetatively, the leaves of *Acronia adonis* are variable, from narrowly to broadly elliptical or ovate, acuminate to obtuse, and with the base cordate. A single, or sometimes three or four, large flowers are borne simultaneously, but the size is inconstant. The dorsal sepal is concave and three-veined; it is five-veined in typical *A. linguifera*. The petals are oblong and vary from microscopically cellular-denticulate to distinctly denticulate. The lip is prominent and usually erect and elongate with recurved sides. Occasionally, the microscopically denticulate margins of the revolute sides meet beneath.

Although most collections can be identified by a three-veined dorsal sepal and a tubular lip, as opposed to the multiveined dorsal sepal of *Acronia linguifera* with an oblong lip, some collections exhibit these principal characters reversed.

Acronia aguirrei (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named for J.L. Aguirre, who first collected this species.

Bas.: *Pleurothallis aguirrei* Luer & R.Escobar, Orquideología 22: 255, 2003.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, terete, 10-19 cm long, with a tubular sheath near the middle and 2-3 sheaths at the base. **Leaf** coriaceous, horizontal, narrowly ovate, acute, 14-18 cm long, 5-7 cm wide, the base cordate, sessile. **Inflorescence** a single flower produced successively at the base of the leaf; spathe reclining, 15 mm long; peduncles 2 mm long within the spathe; pedicels 15 mm long; floral bract 10 mm long; ovary 7-8 mm long; flowers , **sepals** glabrous to microscopically cellular-glandular, the dorsal sepal pale yellow, ovate, acute, 30 mm long, 17 mm wide,

7-veined (13-veined with faint, vestigial veins), the lateral sepals light rose, completely connate into an ovate, acute synsepal, 30 mm long, 15 mm wide, 10-veined; **petals** yellow, broadly oblong, flat, obtuse, minutely diffusely papillose, 11.5 mm long, 4.25 mm wide, 3-veined; **lip** yellow, glabrous, obovate, broadly rounded at the apex, but acutely revolute above the middle, 6.5 mm long unexpanded, 8 mm wide, the disc featureless except for a glenion at the base, the base concave, shortly deflexed, hinged to the base of the column-foot; **column** stout, semiterete, 1.5 mm long, 2 mm wide, the foot 2 mm long, the anther and bilobed stigma apical.

COLOMBIA: **Nariño**: Monopamba, alt. 1500 m, collected by J.L. Aguirre, Jan. 1993, cultivated at Colomborquídeas, 27 Mar. 1997, *R. Escobar 8310* (Holotype: MO), C. Luer illustr. 18782.

This species from southern Colombia is closely related to *Acronia imperialis* from neighboring Ecuador. The leaves of *A. aguirrei* are smaller and narrower, but still among the largest of section *Macrophyllae-Fasciculatae*. The flower is equally large, but the petals are flat and diffusely papillose, and instead of being more or less conical, or pouch-like, the broad, obovate lip is acutely reflexed above the middle.

Acronia alopex (Luer) Luer, comb. nov.

Ety.: From the Greek *alopex*, "a fox," in honor of the late Fred J. Fuchs Jr. of Naranja, Florida, who first collected this species.

Bas.: *Pleurothallis alopex* Luer, Selbyana 3: 46, 1976.

Syn.: *Zosterophyllanthos alopex* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant small to medium-sized, epiphytic, caespitose; roots slender. Ramicauls slender, ascending, erect, 8-20 cm long, a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** horizontal to acutely deflexed, coriaceous, narrowly ovate, acute, 6-10 cm long, 1.8-2.7 cm wide, the base sessile, deeply cordate. **Inflorescence** a solitary, successive flower, borne from an erect to suberect conduplicate spathe, 12-20 mm long, 4-8 mm broad, at the base of the leaf; peduncles 1-2 mm long, concealed within the spathe with the floral bracts and pedicels; floral bracts 4-6 mm long; pedicels 7-8 mm long; ovary 7 mm long, cellular-glandular; flowers resupinate, dark purple; **sepals** cellular-glandular, the middle sepal broadly ovate to suborbicular, obtuse, 8 mm long, 7 mm wide, 5- to 7-veined, the lateral sepals connate into an ovate obtuse, synsepal with the sides revolute, 9 mm long, 4.5 mm wide expanded, 6-veined; **petals** narrowly elliptical, acute, minutely ciliate, 7 mm long, 1.75 mm wide, 1-veined; **lip** thick, ovate-subtriangular, the apex and basal angles rounded, 4 mm long, 3.5 mm wide across the base, the disc shallowly cleft above the middle between a low pair of converging calli, the base concave, with a short, thick, claw, firmly hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, the anther and bilobed stigma apical, the foot rudimentary.

PARAGUAY: **Alto Paraná**: forest northwest of Puerto Stroessner, cultivated April 1975, *F. Fuchs s.n.* (Holotype: SEL), C. Luer illustr. 226.

This close relative of the *Acronia cardiostola-lilijae* complex occurs in Paraguay, whereas related taxa of the complex occur from Venezuela to Bolivia. It is characterized by similar, perpendicular leaves, and a conspicuous, erect spathe. A smaller, deep purple, resupinate flower faces downward with the synsepal and lip foremost. Otherwise, the floral parts are similar to those of the complex.

Acronia altimonile (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *altimonile*, "a high collar," referring to the large, erect spathe.

Bas.: *Pleurothallis altimonile* Luer & R.Escobar, Orquideología 14: 120, 1981.

Syn.: *Zosterophyllanthos altimonile* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant small to medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender to stout, 15-32 cm long, with a spotted, tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** horizontal to spreading, coriaceous, narrowly cordate-ovate, acute, 7-11 cm long, 3-4.5 cm wide, the base deeply cordate, sessile. **Inflorescence** a fascicle of solitary, successive flowers, from an erect, foliaceous spathe 1.5-3 cm long, to 1 cm wide, at the base of the leaf, enclosing peduncles, pedicels and floral bracts; peduncles 2-5 mm long; floral bracts 10 mm long; pedicel 15-20 mm long; ovary 3 mm long; **sepals** yellow-green, glabrous, the dorsal sepal ovate, acute, 26 mm long, 10 mm wide, 5-veined, the lateral sepals suffused with red-brown, connate into an ovate-triangular, acute synsepal 25 mm long, 10 mm wide, 6-veined, forming a broad, shallow mentum below the column-foot; **petals** red-brown,

microscopically denticulate, narrowly linear-falcate, acute, 13 mm long, 1.25 mm wide, 1-veined; **lip** red-brown, minutely verrucose, oblong, acute, subtubular with revolute sides, 14 mm long, 5 mm wide unexpanded, the base with an elevated glenion, acutely deflexed into a flat end, hinged to the column-foot; **column** stout, 2 mm long, 3.5 mm broad, the anther and bilobed stigma apical, the foot short, thick.

COLOMBIA: Without collection data, cultivated by Father Sergio Restrepo at El Retiro, 28 Jan. 1978, *C. Luer 2339* (Holotype: JAUM; Isotype: SEL). **Antioquia**: Yarumal, Llanos de Cuiba, alt. 2750 m, 12 Sept. 1984, *C. Dodson, R. Escobar & E. Valencia 15268* (AMES, K, MO).

This large species from the northern part of the Central Cordillera of Colombia is distinguished by the large, erect spathe at the base of a horizontal, deeply cordate leaf. The large flower barely emerges from the spathe. The five-veined dorsal sepal and nearly equal synsepal are ovate and acute, the petals are narrowly linear, and the lip is long and oblong with recurved sides.

Acronia ambyx (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *ambyx*, "a beaker," in allusion to the shape of the lip.

Bas.: *Pleurothallis ambyx* Luer & R.Escobar, Orquideología 14: 126, 1981.

Syn.: *Zosterophyllanthos ambyx* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3.5-9 cm long, with a close, tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** horizontal to spreading, thinly coriaceous, cordate-ovate, acute, 3-5 cm long, 1.5-2.5 cm wide, the base shallowly cordate, sessile. **Inflorescence** a fascicle of single-flowered peduncles, from a reclining spathe 4-5 mm long, at the base of the leaf; peduncles 6-10 mm long; floral bracts 3-4 mm long; pedicel 3-6 cm long; ovary 3 mm long; **sepals** glabrous, the middle sepal broadly ovate, obtuse to subacute, 4.5-6 mm long, 3-5 mm wide, 5- to 7-veined, the lateral sepals connate into an ovate, obtuse synsepal 4-6 mm long, 4-5 mm wide, 6-veined, shallowly concave; **petals** glabrous, obovate, obtuse, 4.5-5 mm long, 2-2.5 mm wide, 3-veined; **lip** ovoid, subacute, 3-3.5 mm long, 2 mm wide, deeply concave with the margins thin, recurved near and below the middle, the base with a pair of low, thickened veins, truncate, broadly adherent to the column-foot; **column** stout, 1.5 mm long, 1 mm broad, the small anther and stigma apical, the base of the column thick.

COLOMBIA: **Cundinamarca**: without locality, collected and cultivated by Padre Sergio Restrepo at El Retiro, 15 Oct. 1977, *C. Luer 2045* (Holotype: SEL).
ECUADOR: **El Oro**: Cordillera del Mollopungo, Muyuyacu near Machala, alt 1100 m, Aug. 1990, *A. Hirtz 4906* (MO), C. Luer illustr. 20923. **Azuay**: Cordillera del Molleturo, forest above Río Shurimal, alt. 600 m, 27 Jan. 1992, *C. Luer, J. Luer. A. Jesup, A. Jesup & A. Hirtz 16173* (MO).

This species is known from two widely separated areas: one in the Eastern Cordillera of Colombia, the other in southwestern Ecuador at a relatively low altitude. The flowers vary in such minor features that they cannot be separated. The tip of the lip of the Colombian collection is shortly acuminate, while the tip of the lip of the Ecuadorian plants is simply acute.

Vegetatively, this species is indistinguishable from numerous other species of the section with small, shallowly cordate leaves. The clear-yellow, glabrous flower is distinguished by the conspicuous, obovate, obtuse, trinerved petals, an ovoid, deeply concave lip, and a short, thick column with a small, apical anther.

Acronia andreettae Luer, sp. nov.

Ety.: Named in honor of Padre Angel Andreetta, co-collector of this species.

Species haec *A. bivalvis* (Lindl.) Luer et affinitatibus similis, sed sepalis majoribus, petalis angustissime triangularibus, et labello majore minute papilloso differt.

Plant large, robust, epiphytic to terrestrial, caespitose; roots slender. Ramicauls stout, erect, 15-55 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sleaths at the base. **Leaf** horizontal, coriaceous, elliptical-ovate, acute, acuminate, 12-20 cm long, 2-4.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower, subtended by a reclining spathe 15-18 mm long; peduncles 5 mm long, concealed within the spathe; floral bracts thin, tubular, 10 mm long; pedicels 15 mm long; ovary 5 mm long; **sepals** cellular-glandular, the dorsal sepal dull green, ovate, subacute, 17 mm long, 9 mm wide, 3-veined, the lateral sepals purple, connate into an ovate, subacute synsepal, 16 mm long, 10.5 mm wide, 6-veined; **petals** purple, narrowly triangular, acute,

microscopically serrulate, 9.5 mm long, 2 mm wide at the base, 1-veined; **lip** red-purple, oblong, obtuse, cellular-glandular, 9 mm long, 4.75 mm wide, with a glenion at the base, the base subtruncate, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 3 mm wide, the foot 2 mm long, the anther, rostellum and stigma apical.

ECUADOR: *Azuay*: terrestrial amid thicket along a quebrada, above Machangara, alt. 2900 m, 8 Feb. 1978, *C. Luer, J. Luer & A. Andreetta 2496* (Holotype: SEL);

While searching for *Masdevallia virgo-cuencae* in 1975 in the mountains west of Cuenca, where Padre Andreetta thought that the plant could be found, this species of *Acronia* was found growing in massive clusters in thick vegetation along a dry stream bed. No other record of the plant is known. It is a robust species with large, elliptical, shortly acuminate, horozontal leaves. The relatively large flower is basically similar to the *A. bivalvis*-complex, but it differs in narrowly triangular, outstretched petals, and a large, granular lip.

Acronia angustissima Luer & Hirtz, sp. nov.

Ety.: From the Latin *angustissimus*, "very narrow," referring to the leaves and flowers.

Species haec *A. portillae* (Luer) Luer affinis, sed sepalo dorsali synsepaloque multilongioribus angustissime ovatis, et petalis angustissime oblongis distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, terete, 20-25 cm long, with a tubular sheath below the middle and 2 sheaths at the base. **Leaf** coriaceous, suberect, narrowly linear, attenuate, acute, 15-18 cm long, 1 cm wide at the base, shallowly cordate, sessile, with the sides more or less recurved. **Inflorescence** a single flower produced successively in a fascicle of peduncles 15 mm long, at the base of the leaf; spathe fugacious, absent; pedicels 7-8 mm long; floral bract 4-5 mm long; ovary 4 mm long; **sepals** greenish tan, glabrous, the dorsal sepal narrowly linear-ovate, with sides recurved, narrowly obtuse, 24 mm long, 4.5 mm wide at the base, 3-veined, the lateral sepals completely connate into a narrowly ovate synsepal, 22 mm long, 7 mm wide, 4-veined; **petals** greenish tan, narrowly linear-oblong, acute, 14 mm long, 1 mm wide, 1-veined; **lip** brown, ovate, broadly obtuse, 4.8 mm long, 3.2 mm wide, minutely erose, microscopically cellular, the disc featureless except for a small glenion, the base broadly concave, hinged to the bulbous base of the column-foot; **column** stout, semiterete, 1 mm long, 2 mm wide, the anther and bilobed stigma apical.

ECUADOR: **Pastaza**: south of Puyo en route to Macas, epiphytic in forest remnant, alt. 950 m, 28 Feb. 2001, *C. Luer, J. Luer & A. Hirtz 19552* (Holotype: MO).

This species of lowland, eastern Ecuador, is similar to *Acronia portilla*, another endemic species with narrowly linear leaves, but it differs from the latter by very narrow, markedly elongated sepals and petals, and a twice larger lip.

Acronia apopsis (Luer) Luer, comb. nov.

Ety.: From the Greek *apopsis*, "a high place with a commanding view," in allusion to the lofty, mountainous habitat.

Bas.: *Pleurothallis apopsis* Luer, Selbyana 5: 160, 1979.

Syn.: *Zosterophyllanthos apopsis* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a long, tubular sheath below the middle and 2-3 shorter sheaths at the base, 25-45 cm long. **Leaf** deflexed, coriaceous, cordate-ovate, 10-14 cm long, 3-4 cm wide, the apex acute, the base more or less concave, deeply cordate, sessile. **Inflorescence** a fascicle of solitary, successive, yellow, resupinate flowers borne from a reclining to suberect, conduplicate spathe, 10-15 mm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 5 mm long; pedicels 5-11 mm long; ovary 5 mm long; **sepals** cellular-glandular, the dorsal sepal broadly ovate, obtuse, 11-13 mm long, 8.5-9.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 11-14 mm long, 5.5-6.5 mm wide, 4-veined, with the sides recurved; **petals** widely expanded, elliptical, acute, 9-11 mm long, 2.5 mm wide, 1-veined, cellular-pubescent, with minutely denticulate margins; **lip** triangular, 3.5-4 mm long, 3.5-4 mm wide, the apex obtuse, the basal angles subacute, the disc more or less flat, superficially channeled longitudinally, the base subtruncate, narrowly flattened on the end, hinged to the column-foot; **column** stout, 1.5 mm long, 3 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

ECUADOR: **Imbabura**: epiphytic in cold, cloud forest between Mariano Acosta and Ibarra, alt. 3400 m,

9 Feb. 1979, collected by *C. Luer, J. Luer, R. Escobar & A. Hirtz 3955* (Holotype: SEL); Hda. Yura Cruz, páramo north of Ibarra, alt. 3700 m, 25 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 6488* (AAU, AMES, SEL); above Mariano Acosta near Nueva America, alt. 3400 m, 11 Mar. 1996, *S. Dalström, S. Ingram & K. Ferrell-Ingram 2092* (MO); Mojanda, alt. 3300 m, Dec. 1983, *A. Hirtz 1430* (MO). **Carchi**: between Tulcán and Maldonado, slope of Volcán Chiles, alt. 3250-3350 m, 22 May 1993, *B. Boyle & J. Bradford 1839* (MO). **Napo**: northeast of Volcán Cayambe, alt. 10,700 ft., 12 Aug. 1961, *P. Cazelet & T. Pennington 5539* (US); above Papallacta, alt. 3200 m, 29 Oct. 1979, *C. Luer, J. Luer & A. Hirtz 4422* (SEL).

This species, similar to *Acronia lilijae* of lower altitudes, is apparently endemic at high altitudes in northern Ecuador. It is distinguished by a relatively large, yellow flower with the dorsal sepal nearly glabrous and only three-veined; relatively narrow, widely expanded petals; and a more or less flat, triangular lip that is only slightly channeled medially.

Acronia applanata (Luer & Dalström) Luer, comb. nov.

Ety.: From the Latin *applanatus*, "flattened horizontally," referring to the column, flat with the lip.
Bas.: *Pleurothallis applanata* Luer & Dalström, Lindleyana 11: 147, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-12 cm long, with a close, tubular sheath on the lower fourth and 2 other sheaths at the base. **Leaf** erect, coriaceous, ovate, acute, 5-7.5 cm long, 2.4-3.2 cm wide, the base sessile, cordate. **Inflorescence** a single, successive, flat flower, borne flat on the surface of the leaf, subtended by a spathe 6-7 mm long; peduncles 1-2 mm long, concealed within the spathe; floral bracts tubular, 4.5 mm long; pedicels 5 mm long; ovary 3.5 mm long; **sepals** brown, glabrous, the dorsal sepal narrowly elliptical-ovate, acute, 10 mm long, 3.6 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 9.5 mm long, 6 mm wide, faintly 6-veined; **petals** purple, narrowly linear-triangular, acute, oblique, entire, smooth, 6.75 mm long, 1 mm wide, 1-veined; **lip** dark red-purple, oblong-ovate, obtuse, 4.5 mm long, 2.2 mm wide, the surface compressed, slightly convex, diffusely cellular verrucose, the base subtruncate with a medium-sized glenion, with a short, deflexed claw, hinged to the column-foot; **column** stout, dorsally compressed on a plane with the lip, 1-1.5 mm long, 1.5 mm wide, the foot thick, with the anther and stigma apical.

EDUADOR: **Morona-Santiago**: epiphytic in forest north of Gualaquiza, alt. 1800 m, 17 Jan. 1986, *S. Dalström & T. Höijer 1060* (Holotype: MO), C. Luer illustr. 16302.
PERU: **Puno**: Río Candamo, fila at mouth of Río Guacamayo, alt. 800 m, 26 May, 1992, *A. Gentry, C. Reynel et al. 77261* (MO).

Vegetatively, this species from the eastern slope of central Ecuador is similar to many others in the section. The flowers are flat and lie flat against the leaf. The flowers are of average size for the section with an acute, elliptical, three-veined dorsal sepal. The petals are entire and subulate; and the oblong-ovate dorsally compressed, slightly concave lip lies flat against the synsepal. Most distinctive, the column is also flattened, lying in the same plane as the surface of the lip.

Acronia arctata (Luer) Luer, comb. nov.

Ety.: From the Latin *arctatus*, "narrow, straight," referring to the leaves.
Bas.: *Pleurothallis arctata* Luer, Lindleyana 12: 39, 1997.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-11 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, narrowly linear with revolute sides, sulcate on the dorsum, acute, 7-8 cm long, 7-8 mm wide without expanding the sides, the base sessile, shortly cordate. **Inflorescence** a fascicle of successive, single, bilabiate flowers, subtended by a spathe 5-6 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts 5 mm long; pedicels 5 mm long; ovary 1.5-2 mm long; **sepals** fleshy, glabrous, the dorsal sepal yellow, ovate, obtuse, 3.5 mm long, 2.2 mm wide, 3-veined, the lateral sepals dark purple, connate into a concave, broadly ovate, obtuse synsepal, 3 mm long, 3.2 mm wide, 4-veined; **petals** yellow, oblong, acute, entire, 2.5 mm long, 1 mm wide at the base, 1-veined; **lip** dark purple, thick, ovate, obtuse, 2 mm long, 2 mm wide, with the sides dilated below the middle, the disc verrucose, shallowly sulcate centrally, the base truncate, shallowly concave on the end, hinged to the column-foot; **column** terete, 0.5 mm long, 1.5 mm wide, the foot thick, the anther, rostellum and stigma apical.

PERU: **Amazonas**: epiphytic in forest above Pomacochas, alt. 7,500 ft., collected by K. Tokach P-31, cultivated in Tacoma, WA, Oct. 1996, *K. Tokach P-31* (Holotype: MO), C. Luer illustr.

This species, apparently endemic in northern Peru, is another of the species of this section characterized by a long, narrow leaf that is narrowly cordate at the base. It is most closely related to the Colombian and Venezuelan *Acronia calamifolia* and *A. subtilis* respectively, but it differs from them with bilabiate instead of suborbicular flowers, an ovate lip dilated below the middle, and a very short column.

Acronia ascera (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *askera*, "a fur-lined shoe," in allusion to the pubescent, shoelike lip

Bas.: *Pleurothallis ascera* Luer & R.Escobar, Orquideología 20: 36, 1996.

Plant large, epiphytic, caespitose; roots slender. Ramicauls relatively stout, erect, 20-47 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, slightly acuminate, 16-18 cm long, 7-8.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 1-1.5 cm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts thin, tubular, 10 mm long; pedicels 11 mm long, also concealed within the spathe; ovary 8 mm long; flowers red; **sepals** glabrous, the dorsal sepal broadly ovate, obtuse, 15-20 mm long, 12-14 mm wide, 7-veined, the lateral sepals connate into an ovate, obtuse lamina, 15-20 mm long, 12-14 mm wide, 8-veined; **petals** oblong, acute, entire, 10-15 mm long, 4-5 mm wide, 3-veined; **lip** red, white at the base, panduriform, 9.5 mm long, 3-5.5 mm wide, with the margins above the narrowed middle incurved, pubescent, with the margins below the narrowed middle recurved, the disc with a narrow glenion above the base, the base hastate-truncate, hinged on the end to the column-foot; **column** stout, 2 mm long, 3 mm wide, the foot thick, the anther, rostellum and stigma apical.

COLOMBIA: **Valle del Cauca**: Balcanes, alt. ca. 1800 m, collected by E. Valencia, cultivated at Colomborquídeas, 15 Dec. 1992, *R. Escobar 5052* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16621.

The lip of this species is unique in *Acronia* section *Macrophyllae-Fasciculatae*. The large habit is not remarkably different from that of many other large species, but the flowers are large with obtuse, multiveined sepals, and broad, three-veined, diverging petals. The pandurate lip stands erect at the center. Above the narrowed middle the margins are long-pubescent and involute to create a concave epichile. Below the narrowed middle the margins are revolute. The base is broadly hastate and hinged to the column-foot.

Acronia asplundii (Luer) Luer, comb. nov.

Ety.: Named in honor of Erik Asplund who discovered this species.

Bas.: *Pleurothallis asplundii* Luer, Lindleyana 11: 147, 1996.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 35-40 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, very narrowly ovate, acute, attenuate, 18-21 cm long, 2 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a slender spathe 2 cm long; peduncles ca. 5 mm long, concealed within the sheath; floral bracts thin, tubular, ca. 15 mm long; pedicels 25-30 mm long, partially concealed within the spathe; ovary 7 mm long; **sepals** pale yellow-brown with red-brown dots, confluent into longitudinal stripes, microscopically ciliate, the dorsal sepal elliptical, obtuse, 24 mm long, 11 mm wide, 7-veined, the lateral sepals connate into an ovate, obtuse lamina, 19 mm long, 11 mm wide, 8- to 12-veined; **petals** diffusely dotted with red-brown, falcate-oblong, acute, minutely denticulate, 11 mm long, 1.5 mm 1-veined, lobulate at the base; **lip** red-brown, oblong, obtuse, 9 mm long, 5 mm wide, diffusely scabrous, minutely denticulate, the disc with a small glenion above the base, the base subtruncate, reflexed on the end, hinged to the column-foot; **column** stout, 1 mm long, 3 mm wide, the foot thick, the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: San José between Chiriboga and Santo Domingo, alt. 1700 m, 28 June 1955, *E. Asplund 18206* (Holotype: S), C. Luer illustr. 17116.

This species is known only from the collection by Erik Aplund in 1955 from an area near Quito that has been repeatedly botanized subsequently, as well as before by numerous collectors, but it apparently has not been collected another time.

In *Acronia* section *Macrophyllae-Fasciculatae*, *A. asplundii* is distinguished by long, slender ramicauls that bear long, narrowly attenuated leaves, long peduncles, and relatively large flowers. The dorsal sepal is seven-veined, the petals are narrowly falcate and minutely denticulate. The oblong lip is scabrous.

Acronia aurita (C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin *auritus*, "with ears," referring to the basal lobes of the lip.

Bas.: *Pleurothallis aurita* C.Schweinf., Bot. Mus. Leafl. 8: 39, 1940.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect or horizontal, 4-5.5 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect or horizontal, rigid, thickly coriaceous, elliptical, acute, 4-4.5 cm long, 1.2-1.4 cm wide, the base cuneate, sessile. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, subtended by a spathe 8-9 mm long; peduncles 3-4 mm long, concealed within the sheath; floral bracts thin, tubular, 4-5 mm long; pedicels 5-6 mm long; ovary 4 mm long; **sepals** pale yellow-green, fleshy, glabrous, lightly verrucose within above the middle, the middle sepal broadly elliptical, rounded at the apex, 4 mm long, 3 mm wide, 3-veined, the lateral sepals connate into a transverse synsepal, 3.5 mm long, 4.5 mm wide, 4-veined, rounded at the apex, concave centrally between convexities on both halves; **petals** pale yellow, oblong-obovate, obtuse, 1.5 mm long, 0.75 mm wide, 1-veined, with the vein thickened externally; **lip** pale yellow, thick, more or less ovate-cordate with elongate basal lobes, concave and incurved above the middle, with the apex obtuse, sharply contracted into an apiculum, the body 1.6 mm long, 1.25 mm wide, with the erect, narrowly linear-triangular basal angles erect, 1.3 mm long, flanking the column, the disc with a pair of linear calli from a pair of nodules at the base, terminating with the margins below the middle, the base truncate, deflexed, hinged to the base of the column; **column** stout, 1.5 mm long, 1 mm wide, the foot obsolescent, the anther, rostellum and transverse stigma apical.

COSTA RICA: **San José**: vicinity of El General, alt. 1100 m, Nov. 1936, *A.F. Skutch 2941* (Holotype: AMES); Boca de Dota, ca. 1879, *A. Endres 67* (W). **Limón**: Guápiles, "low altitude," collector unknown, cultivated at Lankester Botanical Garden, 7 Mar. 1995, *C. Luer 17381* (MO).

This species is uncommon in eastern Costa Rica where it was first recorded by A. Endres around 1879. It was collected again in 1936 by Alexander F. Skutch. In 1995, it was discovered in cultivation in the Lankester Botanical Garden. Vegetatively, it is similar to *Acronia excavata*, with which it is most closely allied. The non-resupinate flower is borne on the dorsum of the thick, horizontal leaf. The fleshy sepals are rounded at the apex and the petals are proportionately small. The most peculiar lip demonstrates extreme modifications of the morphology seen in its relatives: *A. dorothaea* and *A. excavata*. The body is deeply concave and incurved with an acute apiculum, with a pair of longitudinal calli, and a pair of long, basal lobes that project above the column.

Acronia baezensis Luer & Hirtz, sp. nov.

Ety.: Named for the community of Baeza, near where the species was collected.

Species haec *A. adonis* (Luer) Luer affinis, sed flore minore et sepalis labelloque tubuloso proportione latioribus differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-23 cm long, with a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** suberect to spreading, coriaceous, oblong-ovate, acute, acuminate, 9-13 cm long, 3-4.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive flowers, borne from a reclining spathe 12-15 mm long; peduncles 2-3 mm long within the spathe; floral bracts 7-8 mm long; pedicel 7-9 mm long; ovary 6-7 mm long; **sepals** purple, microscopically ciliate, the dorsal sepal elliptical-orbicular, broadly obtuse to round at the apex, 13 mm long, 11 mm wide, 3-veined, the lateral sepals connate into a broadly oblong, obtuse synsepal 14 mm long, 10 mm wide, 4-veined; **petals** purple, expanded, linear-oblong, acute, minutely denticulate, 8 mm long, 1.5 mm wide, 1-veined; **lip** erect, red-brown, glabrous with ciliate margins, oblong-ovate, with sides revolute above the base and meeting beneath to form a tube, rounded at the apex, 8 mm long, 5 mm wide at the base, with a small glenion, truncate, concave on the end, hinged to the column-foot; **column** stout, 0.75 mm long, 2 mm wide, the anther and bilobed stigma apical, the foot thick, 2 mm long.

ECUADOR: **Napo**: north of Baeza, alt. 1500 m, 10 Aug. 1978, *C. Luer, J. Luer, A. Hirtz & A. Andreetta 3188* (Holotype: SEL).

This species had been considered to be a variation of *Acronia adonis* until a key to the species of the section was made. From *A. adonis* it differs with smaller flowers with broadly ovate sepals, the dorsal sepal being suborbicular and three-veined. The petals are oblong and serrulate. The lip is tubular above the base and proportionately wider, the width being more than half the length.

Acronia batracha (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Greek *batrachos*, "a frog," in allusion to the appearance of the flower upon the leaf.

Bas.: *Pleurothallis batracha* Luer & Hirtz, Lindleyana 11: 149, 1996.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 25-37 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect, coriaceous, oblong-ovate, acute, 15-19 cm long, 3-5.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a succession of single, large, gaping flowers, subtended by a spathe 12 mm long; peduncles ca. 5 mm long, concealed within the sheath; floral bracts tubular, 7 mm long; pedicels 25 mm long; ovary 6 mm long; **sepals** yellow above the middle, purple below the middle, microscopically pubescent externally, microscopically ciliate, the dorsal sepal elliptical-ovate, subacute, 22-24 mm long, 9-13 mm wide, 7-veined, the lateral sepals connate into an ovate, acute synsepal, 20 mm long, 12-18 mm wide, ca. 10-veined; **petals** purple, narrowly falcate-triangular, acute, microscopically denticulate and pubescent, 10-11.5 mm long, 1.5-2.5 mm wide, 1-veined; **lip** red-purple, oblong-ovate, obtuse, 6 mm long, 5 mm wide, the surface slightly convex, diffusely minutely prickly-papillose, the base subtruncate with a small glenion, flattened on the end with a short, deflexed claw, hinged to the column-foot; **column** flat with the surface of the lip, 1.5 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, epiphytic in forest east of Los Encuentros, alt. 1500 m, 19 May. 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13483* (Holotype: MO). **Morona-Santiago**: west of Macas, new road to Guamote, alt. 1600 m, 1 Mar. 2001, *C. Luer, J. Luer & A. Hirtz 19585* (MO).

This large species of the section is most similar to *Acronia titan*, although the flower of *A. batracha* is not as large, but it is larger than the closely related *A. cardiothallis*. From both of them, *A. batracha* is distinguished by a proportionately smaller lip that is convex and minutely papillose instead of concave and shiny-smooth as in the others.

Acronia baudoensis (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named for the community of Baudo in the Chocó where the species was collected.

Bas.: *Pleurothallis baudoensis* Luer & R.Escobar, Orquideología 21: 73, 1998.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-5 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, 3.5 cm long, 1.5 cm wide, the base cordate, sessile. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe ca. 6 mm long; peduncle less than 1 mm long, concealed within the sheath with the pedicels; floral bracts thin, tubular, 6-7 mm long; pedicels 7 mm long; ovary 2 mm long; flowers yellow; **sepals** glabrous, the dorsal sepal broadly elliptical-ovate, obtuse, 4.5 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 4.5 mm long, 3.5 mm wide, 4-veined; **petals** fleshy, oblong, acute, entire, 3 mm long, 1.25 mm wide, thickened along the vein externally; **lip** thick, oblong-triangular, acute, 2.5 mm long, 1.6 mm wide, shallowly channeled centrally with the sides and basal angles suberect, the base truncate with a comparatively large glenion, flattened and minutely pubescent on the end, hinged to a short, narrow column-foot; **column** stout, 1 mm long, the foot thick, minutely pubescent, the anther, rostellum and stigma apical.

COLOMBIA: **Chocó**: Baudo, alt. 400 m, flowered in cultivation near Pereira, 15 May 1993, *A. DeWilde 3915* (Holotype: MO), C. Luer illustr. 16852. **Valle del Cauca**: east of Buenaventura, road to Calima, alt. 50 m, 14 Dec. 1985, *A. Gentry, M. Monsalve & C. Restrepo 53313* (MO).

The habit of this species with a small, cordate leaf with a small, yellow flower is similar to that of the common *Acronia phyllocardioides* that is widely distributed through Central America and the Andes. Apparently *A. baudoensis*, endemic in lowland, coastal Colombia, is distinguished by thicker sepals; oblong, fleshy, subcarinate petals; and a thick, triangular lip with a proportionately large glenion.

Acronia belocardia (Schltr.) Luer, comb. nov.

Ety.: From the Greek *belokardia*, "arrow-heart," referring to the shape of the lip.

Bas.: *Pleurothallis belocardia* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 161, 1924.

COLOMBIA: **Cundinamarca**: vicinity of Bogotá, alt. 2300 m, *H. Hopf s.n.* (Holotype destroyed at B).

No collection matching Schlechter's description of this species has been seen. The holotype was lost at Berlin-Dahlem, and no isotype is known. According to the description, the leaf is oblong, acuminate at the apex and cordate at the base, about 10 cm long and 2.5 cm wide. The ramicaul is also about 10 cm long. The dorsal sepal is broadly ovate, concave, 10 mm long, 7 mm wide, and 3-veined. The synsepal oblong, narrowly obtuse, 10 mm long, only 3.5 mm wide. The petals are nearly as long as the sepals, narrowly "lanceolate," acute, and single-veined. The lip is triangular-ovate, obtuse, 4.5 mm long, 2.75 mm wide, subsagittate-auriculate at the base, and minutely verrucose-asperate toward the base. Not included in the key to the species, *A. belocardia* would fall between lots 4 and 5.

Acronia bitumida (Luer) Luer, comb. nov.

Ety.: From the Latin *bitumidus*, "with two swellings, or calli," referring to the two calli on the lip.

Bas.: *Pleurothallis bitumida* Luer, Lindleyana 11: 70, 1996.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-23 mm long, with a tubular sheath on the lower forth and another sheath at the base. **Leaf** erect, thickly coriaceous, elliptical, acute, 12-19 mm long, 5-7 mm wide, the base cuneate, sessile. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, subtended by a spathe 4 mm long; peduncles 3-4 mm long, concealed within the sheath; floral bracts thin, infundibular, 2 mm long; pedicels 2.5 mm long; ovary 2 mm long; **sepals** translucent pale green with the margins suffused with red, glabrous, the middle sepal elliptical-ovate, subacute, 3 mm long, 1.8 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse, concave lamina, 2.8 mm long, 2.5 mm wide, 4-veined; **petals** oblong, acute, 1.6 mm long, 0.6 mm wide, 1-veined, with the vein thickened at the apex; **lip** green, triangular-ovate, acute, concave, 1.25 mm long, 0.9 mm wide, with the basal angles acute, suberect, the disc with a pair of rounded calli above the base, the base truncate, hinged on the end to the base of the column; **column** stout, 0.5 mm long, 3 mm wide, the foot obsolescent, the anther, rostellum and stigma apical.

COSTA RICA: **Heredia**: Parqué Nacional Braulio Carrillo, Sarapiquí, El Ceibo station, alt. 500 m, 23 Nov. 1990, *S. Ingram & K. Farrell 747* (Holotype: CR; Isotypes: AMES, F, K, MO, SEL), C. Luer illustr. 17038; Atlantic slope of Volcán Barva, west fork of Río Sardinal, alt. 670-720 m, 8 Dec. 1987, *M. Grayum 8513* (CR, MO).

This small species is related to *Acronia excavata*, also from Costa Rica. Both species are characterized by elliptical, sessile leaves and superficially similar flowers except for the small habit and small size of the flower of *A. bitumida*. The lip of *A. bitumida* is triangular and concave with suberect basal angles. The lip of *A. excavata* is more deeply concave with erect, auriculate lobes at the basal angles. In addition, a pair of calli is present at the base of the disc of the lip of *A. bitumida*.

Acronia bivalvis (Lindl.) Luer, comb. nov.

Ety.: From the Latin *bivalvis*, "bivalved," referring to the bilabiate flower.

Bas.: *Pleurothallis bivalvis* Lindl., Orch. Lind. 2, 1846.

Syn.: *Pleurothallis cardium* Rchb.f., Bonplandia 2: 26, 1854.

Ety.: From the Greek *kardia*, "heart," referring to the shape of the leaf.

Syn.: *Pleurothallis lansbergii* Regel, Ann. Sci. Nat. Bot. ser. 4, 6: 373, 1856.

Ety.: Named for Reinhart van Lansbergen, Dutch traveler who collected this species.

Syn.: *Pleurothallis lansbergiana* Regel, Gartenfl. 6: t. 193, 1856 (sphalm.).

Syn.: *Pleurothallis cardiantha* Rchb.f., Linnaea 41: 15, 1877.

Ety.: From the Greek *kardianthos*, "heart-flower," referring to the flower with cordate leaf.

Syn.: *Humboldtia bivalvis* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.
Syn.: *Humboldtia cardium* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.
Syn.: *Pleurothallis stenocardium* Schltr., Notizbl. Bot. Gart. Berlin 6: 123, 1914.
Ety.: From the Greek *stenocardium*, "a narrow heart," referring to the narrow leaf.

Syn.: *Pleurothallis pichinchae* Schltr., Repert. Spec. Nov. Regni Veg. 14: 132, 1915, non Rchb.f.
Ety.: Named for the province of Pichincha where the species was collected.

Syn.: *Pleurothallis sigsigensis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 63, 1921.
Ety.: Named for the community of Sigsig near where the species was collected.

Syn.: *Pleurothallis chanchamayoensis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 73, 1921.
Ety.: Named for the Chanchamayo Valley in Peru where the species was collected.

Syn.: *Pleurothallis ignivomi* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 129, 1921, nom. nov. for *P. pichinchae* Schltr.
Ety.: From the Latin *ignivomus*, "fire-spewing, or volcano," referring to the habitat on a volcano.

Syn.: *Pleurothallis fuscata* Braid, Bull. Misc. Inform. 200, 1924.
Ety.: From the Latin *fuscatus*, "darkened," referring to the color of the flower.

Syn.: *Pleurothallis phaeantha* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 52, 1924.
Ety.: From the Greek *phaeanthos*, "dark flower," referring to the color of the flower.

Syn.: *Pleurothallis angusta* Ames & Schweinf., Sched. Orch. 8: 23, 1925.
Ety.: From the Latin *angustus*, "narrow," referring to the leaves.

Syn.: *Pleurothallis archidiaconi* Ames, Sched. Orch. 9: 29, 1925.
Ety.: Named in honor of Archdeacon Arthur Hombersley who collected this species.

Syn.: *Pleurothallis antonensis* L.O.Williams, Ann. Missouri Bot. Gard. 29: 341, 1942.
Ety.: Named for El Valle de Antón, Panama, where the species was discovered.

Syn.: *Pleurothallis harlingii* Garay, Svensk. Bot. Tidskr. 47: 208, 1953.
Ety.: Named in honor of Dr. Gunar Harling of Göteborg, Sweden, who collected this species.

Syn.: *Pleurothallis lilianiae* Luer, Orquideologia 22: 264, 2003, as *P. lilianae*.
Ety.: Named for the late Lil Severin of Cupertino, California, who collected this species.

Syn.: *Zosterophyllanthos ignivomi* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 8-35 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sleaths at the base. **Leaf** more or less spreading, coriaceous, ovate to narrowly, acute to subacute, or shortly acuminate, 5-17 cm long, 2-9 cm wide, the base sessile, cordate to deeply cordate with overlapping auricles. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 5-18 mm long; peduncles 1-3 mm long within the spathe; floral bracts thin, tubular, 4-7 mm long; pedicels 5-12 mm long; ovary 3-6 mm long; **sepals** yellowish, variously suffused with red, purple or brown, commonly red-brown, glabrous, the dorsal sepal ovate, subacute to obtuse, 6-16 mm long, 3-11 mm wide, 3-veined (occasionally with an incomplete pair of accessory veins), the lateral sepals connate into an ovate, subacute to obtuse synsepal, 5-16 mm long, 4-10 mm wide, 4-veined; **petals** colored as the sepals, expanded or decurved beside the lip, linear-oblong, subacute, 4-8 mm long, 1-1.5 mm wide, 1-veined, with the margins minutely to microscopically denticulate; **lip** variously colored as the sepals, elliptical-oblong-ovate, more or less flat or slightly convex, 3-7 mm long, 2-5 mm wide, the apex rounded, obtuse to narrowly rounded, the margins minutely to microscopically denticulate, the disc with a glenion at the base, the base subcordate, shortly deflexed, hinged to the column-foot; **column** stout, 1-1.5 mm long, 1.5-2 mm wide, the foot thick, obsolescent, the anther, rostellum and stigma apical.

Representative collections of the *Acronia bivalvis*-complex.
VENEZUELA: **Táchira**: near Mérida, 1843, *J. Linden 1480* (Holotype: K), C. Luer illustr. 16981. **Dist. Fed.** "Caracas," alt. 6,000 ft., Dec. 1850, *H. Wagener 41* (holotype of *A. cardium*: W); Near Colonia Tovar, 1854, *A. Fendler 1477* (BR, K, AMES). **Lara**: Moran, below Páramo Los Rosas, alt. 2700 m, 25 June 1979, *R. Liesner et al. 7952* (MO). **Bolívar**: Roraima, 1944, *J.A. Steyermark 58951* (AMES); south of El Dorado, alt. 1155 m, 25 Dec. 1963, *J.A. Steyermark & G.C.K. Dunsterville 92191* (AMES, VEN).
TRINIDAD: Blaychisscuse road past Verdent Vale, on cacao, 11 Dec. 1924, *A. Hombersley s.n.* (holotype of *P. archidiaconi*: TRIN; isotypes: AMES, NY); Cumaca, Dec. 1954, cultivated 6 Feb. 1955, *Downs & Aiken 11* (AMES).
GUYANA: **Roraima mountains**, alt. 2000 m, Jan. 1910, *E. Ule 8577* (holotype of *P. stenocardium*), C. Luer illustr. 16356; Roraima, 1863-64, *C.F. Appun 1135* (K); Roraima, upper slope, 10 Dec. 1884, *E.F. im Thurn 175* (K); Shodikar Creek, tributary of Essequibo River, 8 Jan. 1938, *A.C. Smith 2890* (K, MO, NY, US), C. Luer illustr. 19129.
FRENCH GUIANA: Vallée de la Haute Approuague, Massif des Emerillons, 16 Dec. 1983, *C. Feuillet 1294* (CAY); Montagne de l'Inini, Bassin de l'Inini, 10 Apr. 1986, *C. Feuillet 3774* (CAY); Mont Atachi

Bacca, Région de l'Inini, alt. 520 m, 9 Jan. 1989, *J.J. De Granville 10492* (CAY); without collection data, *Cremers 12758* (CAY), C. Luer illustr. 10955; *Cremers 13080* (CAY), C. Luer illustr. 16954.
COLOMBIA: **Magdalena**: between Santa Marta and San Lorenzo, alt. 2700 m, 12 May 1983, *L. Albert de Escobar & José I. Santa S. 3570* (COL, MO). **Santander**: without locality, collected by E. Valencia, cultivated at Colomborquídeas, 26 Mar. 1997, *R. Escobar 8306* (MO). **Antioquia**: "Medellín," *Roezl s.n.* (holotype of *P. cardiantha*: W), C. Luer illustr. 16359; El Carmen, above San Lorenzo, alt. 2500 m, 21 Mar. 1989, *C. Luer, J. Luer & W. Teague 14338* (MO). **Chocó**: south of pass between Urrao and Carmen de Atrato, alt. 2860 m, 31 May 1995, *C. Luer, J. Luer & R. Escobar et al. 17687* (MO). **Valle del Cauca**: Finca Zingara, between Cali and Buenaventura, alt. 1900 m, 17 Oct. 1994, *J. Giraldo G. & L. Olver A. 504* (MO, TULV). **Nariño**: near Pasto, alt. 2900 m, Jan. 1921, *W. Hopp 1* (holotype of *P. phaeantha*: destroyed at B). Without collection data, cultivated 1865 in St. Petersburg (holotype of *P. lansbergii*: LE). Without collection data, obtained in 1885 from Shuttleworth, Carder & Co., cultivated at Kew, (holotype of *P. fuscata*: K).
PANAMA: **Coclé**: Hills north of El Valle del Antón, alt. ca. 1000 m, 1 Sept. 1941, *P.H. Allen 2701* (holotype of *P. antonensis*: AMES); mountains beyond La Pintada, alt. 400-600 m, 17 Feb. 1935, *A.A. Hunter & P.H. Allen 594* (AMES). **Veraguas**: continental divide above Santa Fe, alt. 700 m, 5 Sept. 1976, *C. Luer & R.L. Dressler 1147* (SEL). **Chiriquí**: Camp Hornito, Fortuna dam site, alt. 1000-1200 m, 13 Aug. 1976, *R.L. Dressler 5351* (SEL); Camp Escopeta, Cerro Colorado, alt. ca. 1700 m, 16 Feb. 1977, *C. Luer & H. Butcher 1591* (SEL).
COSTA RICA: **Limón**: Cordillera de Talamanca, Reserva Biol. Hitoy Cerere, alt. 200 m, 18 Feb. 1889, *G. Herrera 2415* (CR, MO, SEL), C. Luer illustr. 17045. Without locality, ca. 1867, *A. Endres s.n.* (W).
MEXICO: **Veracruz**: region of San Andrés Tuxtla, near Cerro Tapalcan & Cerro Mastagaga, 23 Aug. 1953, *R.L. Dressler & Q. Jones 151* (AMES); east of Tebanca, east side of Lago Catemaco, alt. 800 m, 5 July 1980, *M. Nee & B.F. Hansen 18848* (AMES). **Chiapas**: Monte Libano east of Ocosingo, 17 July 1954, *R.L. Dressler 1431* (AMES).
ECUADOR: **Carchi**: between Tulcán and Maldonado, alt. 2700 m, 18 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 5692* (AAU, AMES). **Pichincha**: Nono, 1899, *A. Sodiro 9* (holotype of *P. pichinchae*: BR; isotype: QPLS); forest of Silante, western slopes of Corazón, alt. 2200-2500 m, *F.C. Lehmann 8208* (K). **Esmeraldas**: west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer A. Hirtz et al. 12396* (MO). **Bolívar**: cloud forest west of Salinas and La Palma, alt. 2000 m, *C. Luer, J. Luer, A. Hirtz et al. 14962* (MO). **Tungurahua**: slopes of Tungurahua above Baños, alt. 3000 m, *C. Luer, S. Dalström, T. Höijer & J. Kuijt 9762* (MO). **Morona-Santiago**: around Chiguinda, eastern slopes of Andes of Sigsig, alt. 1600-2000 m, May 1887, *F.C. Lehmann 6508* (holotype of *P. sigsigensis*: K; isotype: AMES). **Napo**: north of Baeza, alt. 1500 m, 10 Aug. 1978, *C. Luer, J. Luer, A. Hirtz & A. Andreetta 3229* (SEL); near Sumaco, alt. 1100 m, 9-11 Oct. 1999, *A. Hirtz, X. Hirtz, H. & M. Evans 6677* (MO), C. Luer illustr. 20819. **Azuay**: Sevilla de Oro, alt. ca. 3200 m, 1 July 1947, *G. Harling 1347* (Holotype: GB; Isotype: AMES). **Loja**: canyon above Río Yambala, above Vilcabamba, alt. 2400 m, 13 Feb. 1987, *D. D'Alessandro 146* (SEL). **Zamora-Chinchipe**: between Loja and Zamora, alt. 1800 m, 21 Aug. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 4143* (AAU).
PERU: **Amazonas**: Bagua, east of La Peca, alt. 6,560 ft., 20 July 1978, *A. Barbour 2728* (MO, SEL). **San Martin**: Rioja, between Pedro Ruiz and Moyobamba, Venceremos, alt. 1900 m, 28 July 1983, *D.N. Smith 4439* (MO). **Cajamarca**: Chota, Bosque de Pagaibamba, between Huambos and Querecoto, alt. 2500 m, 18 Oct. 1987, *I. Sánchez V. 4586* (CPUN, F); San Ignacio, Huarango, El Convento, alt. 1200-1600 m, 1 July 1996, *J. Campos & E. Rodriguez 2851* (MO, SEL). **Huánuco**: between Huánuco and Tingo Maria, alt. 2400 m, 6 Dec. 1981, *T. Plowman & P.M. Rury 11149* (SEL). **Pasco**: Oxapampa, alt. 1800 m, 31 Jan. 1979, *C. Luer & J. Luer 3822* (SEL). **Junín**: near La Merced in the Chanchamayo Valley, 1920, *Anton & Carl Köhler s.n.* (holotype of *P. chanchamyoensis* destroyed at B). Without collection data, cultivated in Cupertino, CA, by Lil Severin, 13 Dec. 1978, *C. Luer 3637* (holotype of *P. lilianiae*: SEL).
BOLIVIA: **La Paz**: Nor Yungas, Sacramento Valley of Río Coroico, alt. 2450 m, 29 Jan. 1984, *A. Gentry & J. Solomon 44806* (MO).

This is the greatest catch-all or waste basket of the genus. Numerous known and unknown taxa are "lumped" together in this massive assemblage. An attempt was made to recognize some names here because of well-established usage, but they do not distinguish themselves in a key to the species. There is a gradual, morphological continuum from one extreme to the other. Beyond these bounds, species are acknowledged.

Acronia bivalvis, the first species of this "species-complex" to be identified, was described by Lindley from a collection made by Linden near Mérida, Venezuela, in 1843. Lindley states that the lip had "dropped off" from the flower he described. However, still present on the sheet of the type-specimen (*Linden 1480*), a century and a half later, another flower was found intact. The illustration made from the hydrated flower serves as a basic pattern that is found in innumerable

collections that occur through Central America and the Andes. Many collections are practically identical. Collections with trivial variations in infinite combinations constitute this "species-complex." Many variations have been given specific names, but a much larger number are unnamed. It is illogical to recognize some and not the others. There is no physical feature other than size to separate them.

As a "species-complex," *Acronia bivalvis* is widely distributed through Central America and the Andes. In Central America it is known as *Pleurothallis antonensis*, and a narrow-leaved variation was described as *P. angusta*. In the eastern part of its distribution into the Guyanas it is known as *P. stenocardia* and *P. archidiaconi*. Early Colombian collections were described by Reichenbach as *P. cardium* and *P. cardiantha*. A population in Ecuador (*P. sigsigensis*) is practically identical to the type from Venezuela. A small-flowered taxon, *P. lilianiae*, is intermediate with *A. cordata*.

Vegetatively, the cordate leaf is too variable in size and shape to be of value in identification, although it rarely attains the broadly ovate, deeply cordate shape of *Acronia cordata*. All the flowers are basically similar and recognizable in spite of varying sizes. The dorsal sepal of the type is elliptical-ovate and obtuse with three primary veins, and a pair of incomplete, accessory veins. Most collections considered to be *A. bivalvis* have a three-veined dorsal sepal, but not infrequently, incomplete, accessory veins occur as in the type, especially in larger flowers. Collections with a distinctly five-veined dorsal sepal are excluded. If they were included, problems would be compounded.

The dorsal sepal of the type (*Linden 1480*) is 16 millimeters long, and the lip is seven millimeters long. The petals are narrowly oblong, single-veined and acute with the margins minutely serrulate. The lip, about half as long as a sepal and about as long as a petal, is oblong to ovate, obtuse at the apex, and broadly truncate at the base with a glenion. The pandurate lip of *P. chanchamayoensis* is probably an artefact. Otherwise, the disc is featureless with only cellular margins.

Acronia blepharopetala (Schltr.) Luer, comb. nov.

Ety.: From the Greek *blepharopetalon*, "an eyelash petal," referring to the ciliate petals.

Bas.: *Pleurothallis blepharopetala* Schltr., Repert. Spec. Nov. Regni Veg. 14: 128, 1915.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 20-40 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to nearly horizontal, coriaceous, narrowly ovate, acute, slightly acuminate, 10-17 cm long, 2.5-4 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a reclining spathe 15-18 mm long; peduncles 4-5 mm long, concealed within the sheath; floral bracts tubular, 5-8 mm long; pedicels 12-15 mm long; ovary 4-5 mm long; **sepals** dark purple, cellular-glandular externally, the dorsal sepal elliptical-ovate, obtuse, 9-10 mm long, 6-7 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 7.5-9 mm long, 7.5-9 mm wide, 4-veined; **petals** dark purple, decurved, oblong, obtuse, cellular-verrucose, denticulate, 6-7 mm long, 1-1.3 mm wide, 1-veined; **lip** dark purple, thick, ovoid, obtuse, 3-3.5 mm long, 3.5-4 mm wide, the disc concave centrally, thickened and concave at the deflexed base, hinged to the column-foot; **column** stout, 2 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: epiphytic near Canchacato, May 1885, *A. Sodiro 10* (Holotype: BR; Isotype: QPLS); along the new road between Quito and Santo Domingo, alt. ca. 2000 m, Mar. 1975, *C. Luer & R. Kent 289* (SEL); same area, alt. ca. 2000 m, Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 808* (SEL); above Tandapi, alt. 2100 m, 31 Mar. 1985, *C. Luer, J. Luer & A. Hirtz 11029* (MO).

This large species is apparently confined to the lower western slopes of Mt. Pichincha in Ecuador. It is characterized by the narrowly ovate, suberect leaves and a medium-sized, deep purple flower. The sepals are obtuse and the petals are denticulate. The distinctive lip is very thick and ovoid with a central cavity.

Acronia bothros (Luer) Luer, comb. nov.

Ety.: From the Greek *bothros*, "a pit, or cavity," referring to the deeply depressed glenion.

Bas.: *Pleurothallis bothros* Luer, Lindleyana 11: 70, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-15 cm long, with a tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, ovate to oblong-ovate, acute, 5-9 cm long, 2-4 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive or a few simultaneous, single flowers, subtended by a broad, more or less inflated, suberect spathe 1-2 cm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts tubular, 7 mm long; pedicels 5 mm long; ovary 5 mm long; **sepals** pale green, thick, tri-subcarinate, glabrous, the dorsal sepal elliptical-ovate, obtuse, 5.5-6.5 mm long, 2.5-3 mm wide, 3-veined, the lateral sepals connate into an ovoid, concave, obtuse, minutely bifid synsepal, 5-5.5 mm long, 3.5-5.5 mm wide expanded, 6-veined; **petals** light green, thick, oblong, acute, entire, 4 mm long, 0.9-1.25 mm wide, 1-veined; **lip** green, oblong-ovate, obtuse, 3.5 mm long, 2.5 mm wide, slightly dilated at the base, the disc with a large, concave glenion above the base, concave on the end, hinged to the column-foot; **column** stout, 0.5 mm long, 1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COSTA RICA: **Puntarenas**: Monteverde Reserve, alt. 1750 m, 20 Mar. 1995, *C. Luer, J. Luer, A. Atwood & W. Rhodehamel 17436* (Holotype: MO); Monteverde Reserve, alt. 1500 m, 3 Feb. 1992, *S. Ingram & K. Farrell 1252* (SEL, MO), C. Luer illustr. 17050. **Alajuela**: Monteverde Reserve, Peñas Blancas, alt. 750 m, 17 Mar. 1989, *J.T. Atwood 89-87* (SEL); Parqué Rincón de la Vieja, alt. 800-900 m, *G. Herrera 1516* (CR, MO). **Guanacaste**: Rincón de La Vieja, Volcán Santa Maria, alt. 900-1200 m, 27 Jan. 1983, *G. Davidse et al. 23420* (MO). **Cartago**: Estrella, alt. 5,200 ft., 22 July 1932, *H.E. Stork 328* (MO). Cordillera de Talamanca, alt. 2400 m, *D.E. Mora s.n.* (USJ).

This species differs from all the other members of the section by the ramicauls and the elliptical-obovate leaves about equal in length, and a fascicle of thick, fleshy, light green flowers. The dorsal sepal is obtuse and three-veined; the petals are oblong and acute; and the glenion near the center of the thick, oblong-ovate, obtuse lip is deeply depressed.

Acronia bovilingua (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *bovilingua*, "a cow's tongue," referring to the incurved labellum.

Bas.: *Pleurothallis bovilingua* Luer & R.Escobar, Orquideología 21: 75, 1998.

Plant large, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 15-43 cm long, with a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** horizontal to deflexed, coriaceous, narrowly cordate-ovate, acute, acuminate, 9-20 cm long, 2.5-5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of solitary, successive flowers, from a slender, reclining spathe, ca. 2 cm long; peduncles less than 10 mm long, within the spathe; floral bracts 5-10 mm long; pedicel 15 mm long; ovary 6 mm long; **sepals** glabrous, the dorsal sepal light green suffused with rose at the base, elliptical-ovate, acute, 25-30 mm long, 15 mm wide, 7-veined, the lateral sepals light rose-brown, connate into an ovate, acute synsepal 24-25 mm long, 17 mm wide, 8-veined; **petals** rose, yellowish toward the apex, glabrous, spreading, obliquely ovate, acute, 17 mm long, 6 mm wide, 3-veined; **lip** red, minutely papillose, thin, ovate, 7 mm long unexpanded, 6 mm wide, the apex narrowed, rounded, incurved, pubescent, the base with a small glenion, subtruncate, concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 3 mm broad, the anther and bilobed stigma apical, the foot thick.

COLOMBIA: Without collection data, cultivated by A. Mejía in Medellín, Colombia, and photographed by G. Escobar, specimen sent to AMES, 1972; *G. Escobar 986* (Holotype: AMES); without collection data, cultivated by M. & O. Robledo at La Ceja, 14 October 1977, *C. Luer 2029* (SEL).

This species is known from a photograph made by Gilberto Escobar in May 1972. A herbarium specimen was sent to AMES where it was filed away. Probably a division of the same plant was cultivated by Martha and Oscar Robledo at La Ceja in 1977, at which time an illustration and another herbarium specimen were made. The collector and locality within Colombia are unknown, and no other collection is known. The species is distinguished by a narrowly ovate, acuminate leaf deeply cordate at the base; large flowers; broad, three-veined, spreading petals; and an ovate lip with the rounded apex incurved, reminiscent of the tongue of a cow.

Acronia braidiana Luer, nom. nov. for *P. cardiocrepis* Braid, non Rchb.f.

Ety.: Named for Kenneth William Braid of the Royal Botanic Gardens, Kew, who described this species.

Syn.: *Pleurothallis cardiocrepis* Braid, Bull. Misc. Inform. 199, 1924, non Rchb.f. 1888.
Ety.: From the Greek *cardiocrepis*, "torn heart," referring to the lacerated petals and lip.

Plant medium in size, presumably epiphytic, presumably caespitose; roots unknown. Ramicaul slender, ca. 16 cm long per description, preserved without sheaths. **Leaf** suberect to spreading, coriaceous, ovate, acute, slightly acuminate, 6-8.5 cm long, 3.5-5 cm wide, the base sessile, deeply cordate. **Inflorescence** often 2-3 single flowers, borne in a dense fascicle within a spathe 7-8 mm long, ca. 5 mm wide, at the base of the leaf; peduncles 5-7 mm long, filling the sheath; floral bracts tubular, 4 mm long; pedicels 4 mm long; ovary 6 mm long; floral parts greenish, suffused with rose; **sepals** glabrous, the dorsal sepal ovate, subacute, 6.5 mm long, 3 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 6 mm long, 5.5 mm wide, 6-veined; **petals** expanded, narrowly triangular, acute, shortly fringed below the middle, 4 mm long, 1 mm wide, 1-veined; **lip** triangular-sagittate, narrowly obtuse, minutely apiculate, minutely spiculate with the margins fringed, 3.5 mm long, 3 mm wide, with a glenion at the base, the base concave, firmly hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, the foot thick, 1 mm long, with the anther, rostellum and stigma apical.

WITHOUT COLLECTION DATA: habitat unknown, received from B.S. Williams in 1887, cultivated at the Royal Botanic Gardens, Kew, flowering at intervals, 1923, s.n. (Holotype: K), C. Luer illustr. 20814.

This free-flowering species, one of many allies of the *Acronia bivalvis*-complex, had been in cultivation at Kew since 1887 under the name *Pleurothallis cardiocrepis*, possibly having been confused with Reichenbach's *P. cardiocrepis*. It is best distinguished by sepals about six millimeters long, the dorsal three-veined, petals shortly fringed below the middle, and a fringed, sagittate lip.

Acronia bucculenta (Luer) Luer, comb. nov.

Ety.: From the Latin *bucculentus*, "with full cheeks," in allusion to the labellum.
Bas.: *Pleurothallis bucculenta* Luer, Selbyana 3: 70, 1976.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-28 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, slightly acuminate, 5-8 cm long, 2.5-3 cm wide, the base sessile, deeply cordate. **Inflorescence** a single flower, borne on top of the leaf, subtended by a spathe 7-12 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts tubular, 7-8 mm long; pedicels 7-10 mm long; ovary 2-5 mm long; **sepals** dark purple, glabrous, the dorsal sepal elliptical-ovate, obtuse, 10-11 mm long, 6.5-8 mm wide, 3- to 5-veined, the lateral sepals connate into an ovate, obtuse synsepal, 10-11 mm long, 7-10 mm wide, 4-veined; **petals** expanded, dark purple, narrowly oblong, acute, minutely denticulate to smooth, 5-7 mm long, 1-1.25 mm wide, 1-veined; **lip** dark purple, elliptical, obtuse, minutely apiculate, cellular glandular with the margins cellular, 5-8 mm long, 3-6 mm wide, the disc with both halves convex, shallowly channeled between, with a glenion at the base, the base subtruncate, flattened on the end with a short, deflexed claw, hinged to the column-foot; **column** stout, 2 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Tungurahua**: terrestrial on a road embankment between Baños and Río Negro, alt. 1500 m, collected March 1975, cultivated 5 Jan. 1976, *C. Luer & R. Kent 642* (Holotype: SEL); without locality, cultivated in Chamblee, GA, *F L Stevenson 91-1028-7* (MO), C. Luer illustr. 16321.

This species is one of many allies of the *Acronia bivalvis*-complex, but is best distinguished from it by the proportionately large lip which is longitudinally sulcate between convex halves.

Acronia bulbosa Luer & R.Escobar, sp nov.

Ety.: From the Latin *bulbosus*, "bulbous," referring to the convex lip.

Inter species sect. *Macrophyllae-Fasciculatae* Lindl. habitu grande, foliis anguste linear-ovatis, sepalis obtusis, petalis linear-oblongis serratis et labello pyriformi bulboso distinguitur.

Plant medium in size to large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 10-23 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, coriaceous,

narrowly ovate, acute, acuminate, 7-15 cm long, 1.5-2.5 cm wide, the base sessile, cordate. **Inflorescence** a single, successive flower, subtended by a reclining spathe 14-22 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts tubular, estimated 10 mm long; pedicels 10 mm long; ovary 7 mm long; flowers deep purple; **sepals** fleshy, cellular-pubescent externally, the dorsal sepal elliptical-ovate, subacute to obtuse, 14 mm long, 9 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 14 mm long, 9 mm wide; **petals** not expanded, linear-oblong, acute, denticulate, 7.5 mm long, 1.25 mm wide, 1-veined; **lip** pyriform-globose, convex, round at the apex, 7 mm long, 6 mm wide, the disc with a central convexity on the convex surface, with a glenion above the base, flanked by a pair of low lamellae, deeply concave beneath with a bulbous swelling beneath the apex, the base concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 2.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: *Antioquia*: Frontino, near El Plateado gold mine, alt. 2060 m, 5 May 1983, *C. Luer, J. Luer & R. Escobar 9043* (Holotype: SEL). **Valle del Cauva**: between Cali and Buenaventura, cultivated at Colomborquídeas, 23 May 1995, *C. Luer 17617* (MO),

This species from the Western Cordillera of Colombia is related to the numerous variations of the *A. bivalvis*-complex, but it is distinguished from them by long, narrowly linear-ovate leaves, and a convex, hemispherical lip.

Acronia calamifolia (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *calamifolius*, "with reed-like leaves," referring to the slender, tube-like leaves.
Bas.: *Pleurothallis calamifolia* Luer & R.Escobar, Orquideología 20: 40, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-20 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect to suberect, coriaceous, narrowly linear with revolute sides, acute, 9-16 cm long, 5-8 mm wide without expanding the sides, the base sessile, shallowly cordate. **Inflorescence** a fascicle of successive, single, suborbicular flowers, subtended by a spathe 5-8 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts infundibular, 5 mm long; pedicels 4-5 mm long; ovary 2.5 mm long; **sepals** dull green, fleshy, glabrous, the dorsal sepal broadly ovate, deeply concave, with the apex rounded, 3.5 mm long, 3 mm wide unexpanded, 3-veined, the lateral sepals connate into a deeply concave, broadly ovate, obtuse synsepal, 4 mm long, 3.5 mm wide unexpanded, 4-(6-)veined; **petals** green, fleshy, especially at the apex, ovate-triangular, narrowly obtuse, entire, 3.25 mm long, 1.5 mm wide, 1-veined; **lip** thick, green, broadly ovoid-subquadrate, with the margins erect, obtuse at the apex, 3 mm long, 2.5 mm wide, the disc microscopically cellular-glandular, broadly and shallowly sulcate, the base broadly truncate, with an obscure glenion, transversely concave on the end, hinged to the column-foot; **column** terete, 2 mm long, 1.5 mm wide, the foot thick, convex, long-pubescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Norte de Santander**: epiphytic in cloud forest, Alto de Santa Inez, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10325* (Holotype: MO).

This species, known from the Eastern Cordillera of Colombia, is closely allied to *Acronia subtilis* found nearby in adjacent, western Venezuela. They are indistinguishable vegetatively, and both bear very small, globular flowers at the base of the long, narrow leaf with revolute sides. *Acronia calamifolia* is distinguished by the thick petals, especially at the obtuse apex. The petals of *A. subtilis* are thin and acute. The lip of *A. calamifolia* is proportionately larger, non-verrucose, and concave on the end that is not sharply deflexed as it is in *A. subtilis*.

Acronia calceolaris (Rchb.f.) Luer, comb. nov.

Ety.: From the Latin *calceolaris*, "like a shoe," referring to the deeply concave synsepal
Bas.: *Pleurothallis calceolaris* Rchb.f., Linnaea 41: 15, 1877.

Syn.: *Pleurothallis fornix* Luer & R.Escobar, Orquideología 16: 160, 1984.
Ety.: From the Latin *fornix*, "a vault," in reference to the rigid, deeply convex, dorsal sepal.
Syn.: *Zosterophyllanthos fornix* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant large, terrestrial, presumably also epiphytic, caespitose; roots coarse. Ramicauls stout, erect to suberect, 20-35 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** dark blue-green above, suffused with purple beneath, spreading, rigidly coriaceous, ovate, acute, 15-20 cm long, 5-8 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of 2-4 simultaneous, single flowers, borne from a reclining spathe 1.5-1.8 cm long at the base of the leaf; peduncles 1-3 mm long, within the spathe; floral bracts thin, tubular, 10-12 mm long; pedicels 15-17 mm long; ovary 8 mm

long, verrucose; **sepals** rigidly fleshy-coriaceous, reddish purple brown, minutely verrucose within, verrucose-pubescent externally, the dorsal sepal orange above the middle, oblong, obtuse, convex with revolute sides, 15 mm long, 6 mm wide unexpanded, 5-veined, the lateral sepals connate into a deeply concave, transversely ovate, obtuse synsepal, 12 mm long, 12 mm wide unexpanded; **petals** purple, narrowly triangular and acute above obtuse marginal angles between the middle and lowest quarter, erose, verruculose, 8 mm long, 3 mm wide above the base; **lip** red-purple, thick, transversely ovate, 3 mm long, 4 mm wide, the apex rounded, the disc with a small glenion and a pair of low, rounded calli near the middle, the base broadly cordate with rounded basal lobes, flattened on the end, hinged to the thick column-foot; **column** stout, 1 mm long, 2 mm broad, the foot thick, 1 mm long, with the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: "Medellín," *B. Roezl s.n.* (Holotype: W); terrestrial on road cut near Palmitas, alt. 2180 m, 22 Apr. 1983, *C. Luer, J. Luer, R. Escobar et al. 8758* (holotype of *P. fornix*: SEL).

This species was described by Reichenbach from a collection by Roezl from somewhere in the old New Grenada. Plants discovered recently in the mountains west of Medellín in Colombia and described as *Pleurothallis fornix* most likely represent this species. Reichenbach's specimen consists only of leaves, and his description is very brief and cryptic, but the crude sketch applies to this species.

Acronia calceolaris is distinguished by large, blue-green leaves borne by longer, stout ramicauls. A few, fleshy-rigid flowers are produced from a reclining spathe at the base of the leaf. The dorsal sepal is verrucose and convex with recurved sides. The synsepal is deeply concave and transversely ovate. The petals are verruculose and with obtuse marginal angles above the basal quarter. The lip is thick and transversely ovate.

Acronia callifera (C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin *callifer*, "callus-bearing," referring to the labellum.

Bas.: *Pleurothallis callifera* C.Schweinf., Fieldiana Bot. 28: 180, 1951.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect 9-23 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** coriaceous, erect to horizontal, ovate, acute, 5-10 cm long, 2-4.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single flower, produced successively, borne from a reclining, fugaceous spathe at the base of the leaf; peduncles, floral bracts and pedicels unknown; ovary 3 mm long; **sepals** translucent dull green with dull lavender stripes, glabrous, the dorsal sepal elliptical, subacute, 7.5 mm long, 4 mm wide, 3-veined, the lateral sepals connate into a concave, ovate, subacute synsepal, 7 mm long, 5 mm wide expanded; **petals** lavender, narrowly elliptical, acute, 5.5 mm long, 1.5 mm wide; **lip** purple, thick, ovate-triangular, obtuse, 4.25 mm long, 3 mm wide, the disc concave, longitudinally grooved, with a glenion on a subpyramidal callus at the base, the base broadly truncate, flattened on the end, hinged to the thick column-foot; **column** stout, 1 mm long, the foot thick, 1 mm long, with the anther, rostellum and stigma apical.

VENEZUELA: **Bolívar**: Ptari-tepui, alt. 2100-2285 m, 30 Oct. 1944, *J.A. Steyermark 59541* (Holotype: VEN; Isotype: AMES); C. Luer illustr. 16357.

This species is known only from the type-collection. Neither vegetatively nor florally remarkably different from numerous other species of the section, it is distinguished by the ovate-triangular, more or less conduplicate lip, with a prominent, subpyramidal callus at the base that bears a medium-sized glenion. The possibility that this is an artifact exists.

Acronia calogramma (Luer) Luer, comb. nov.

Ety.: From the Greek *calogrammikos*, "beautiful lines," referring to the striped dorsal sepal.

Bas.: *Pleurothallis calogramma* Luer, Orquideología 22: 256, 2003.

Plant medium to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, terete, 12-22 cm long, with a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** coriaceous, spreading, ovate, acuminate, acute, 8-10.5 cm long, 4-5.5 cm wide, the base cordate, sessile. **Inflorescence** a single flower produced in a few-flowered fascicle at the base of the leaf; spathe 7-10 mm long; peduncles ca. 1 mm long within the spathe, pedicels 5-8 mm long; floral bract 5 mm long; ovary 6 mm long; **sepals**

glabrous, the dorsal sepal white with 3 prominent stripes, ovate, obtuse, 12 mm long, 8 mm wide, 3-veined, the lateral sepals white with rose veins, connate into an ovate synsepal, 12 mm long, 8 mm wide, 4-veined; **petals** dark rose on upper half, white on lower half, narrowly oblong-triangular, acute, microscopically ciliate, 9 mm long, 1.25 mm wide, 1-veined; **lip** dark red, elliptical, broadly rounded at the apex, convex, microscopically verrucose, 5 mm long, 4 mm wide, with minutely denticulate margins, the disc convex with a glenion, the base broadly concave, hinged to the base of the column-foot; **column** red, stout, semiterete, 1 mm long, 2.5 mm wide, the anther and bilobed stigma apical.

COLOMBIA: **Antioquia**: Las Palmas, alt. 8,000 ft., collected by Janet Kuhn Nov. 1973, flowered in cultivation at J & L Orchids, 7 Nov. 1977, *C. Luer 2115* (Holotype: SEL).

This species from the Central Cordillera of Colombia is most similar to the frequent and variable *Acronia bivalvis*, but it is distinguished from all the variations by white sepals prominently striped in red-purple along the veins. The upper half of the petals is red while the lower half is white. The lip is dark red and convex.

Acronia calolalax (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *calolalax*, "a pretty frog," in allusion to the flower sitting upon the leaf.
Bas.: *Pleurothallis calolalax* Luer & R.Escobar, Orquideología 21: 78, 1998.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 15-25 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, narrowly ovate, acute, 14-16 cm long, 3.5-4 cm wide, the base sessile, with cordate lobes 1 cm deep. **Inflorescence** a fascicle of successive, single flowers, from a spathe 1.5 cm long; peduncles ca. 5 mm long, concealed within the sheath; floral bracts tubular, 10-15 mm long; pedicels 18-20 mm long; ovary strongly arcuate, 10 mm long; **sepals** purple, cellular-pubescent externally, the dorsal sepal broadly elliptical, acute, 20 mm long, 13 mm wide, 7-veined, the lateral sepals connate into an ovate, obtuse synsepal, 20 mm long, 14.5 mm wide, 10-veined; **petals** purple, obliquely triangular-ovate, acute, glabrous, 12 mm long, 3.5 mm wide, 3-veined; **lip** purple, broadly ovate-suborbicular, obtuse, glabrous, 9 mm long, 8 mm wide, shallowly concave, the base subtruncate with a small glenion in a basal depression, the base with a short, deflexed claw, hinged to the column-foot; **column** 1 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: epiphytic in cloud forest north of the pass between Urrao and Carmen de Atrato, alt. 2430 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar et al. 17693* (Holotype: JAUM; Isotype MO); Frontino, 12 Km from Nutibara, alt. 2150, 11 Dec. 1988, *G. McPherson 13443* (MO); Urrao, Guangarales, alt. 1700-1800 m, collected by M. Zapata, cultivated at Colomborquídeas, 23 May 1995, *C. Luer 16651* (MO). **Chocó**: between Bolívar and Quibdo, alt. 1070 m, 13 Apr. 1983, *A. Juncosa 926* (MO). **Risaralda**: San Antonio de Chamí, cultivated at Colomborquídeas, 23 May 1995, *C. Luer 17616* (MO).

Vegetatively, this species appears similar to many other species of the section with strong ramicauls longer than a horizontal, narrowly ovate leaf cordate at the base. A large, gaping, purple flower is borne successively on top of the base of the leaf. The broad, dorsal sepal and synsepal are multiveined; the petals are triangular, acute, glabrous and 3-veined; and the lip is broadly ovate and shallowly concave with the surface shiny.

Acronia canaligera (Rchb.f.) Luer, comb. nov.

Ety.: From the Latin *canaliger*, "channel-bearing," referring to the labellum.
Bas.: *Pleurothallis canaligera* Rchb.f., Linnaea 41: 15, 1877.

Syn.: *Pleurothallis syringifolia* Kraenzl., Bot. Jahrb. Syst. 54, Beibl. 117: 22, 1916.
Ety.: From the Latin *syringifolius*, "with leaves like *Syringa*," referring to lilac-like leaves.

Syn.: *Pleurothallis scaphioglottis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 113, 1920.
Ety.: From the Greek *scaphioglottis*, "boat-shaped lip," referring to the labellum.

Plant medium in size to large, terrestrial to epiphytic, caespitose; roots coarse. Ramicauls slender to stout, erect to suberect, 5-35 cm long, with a tubular, more or less verrucose, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, rigidly coriaceous, ovate, acute, 4-9 cm long, 2.5-6 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of several (3-10), simultaneous, single flowers, borne among spent pedicels and buds from a fugacious spathe 2-5 mm long at the base of the leaf; peduncles 2-4 mm long; floral bracts thin, tubular, 3 mm long; pedicels 5-8 mm long; ovary 3-4

mm long, verrucose; **sepals** fleshy-coriaceous, yellow to green, flecked with brown or purple, verrucose externally, glabrous within, the dorsal sepal ovate, narrowly obtuse, concave, 2.5-4 mm long, 2-2.5 mm wide, 3-veined, the lateral sepals connate into a concave, ovate, obtuse synsepal, 2.5-4 mm long, 3-3.5 mm wide; **petals** greenish, fleshy, thickened, subverrucose externally, narrowly ovate, narrowly obtuse, 2.5-3.5 mm long, 1 mm wide; **lip** green to purple, thick, fleshy, ovate, obtuse, concave, cellular-papillose within, 2.5-3 mm long, 1.3-1.75 mm wide, the base broadly truncate, concave on the end, firmly hinged to the thick column-foot; **column** stout, 1.5 mm long, the foot thick, 0.5 mm long, with the anther, rostellum and stigma apical.

COLOMBIA: Without locality, *B. Roezl s.n.* (Holotype: W), C. Luer illustr. 17005. **Antioquia**: without locality, *M. Madero s.n.* (holotype of *P. scaphioglottis* destroyed at B); highlands above Sta. Rosa, alt. 2000-2600 m, Nov. 1891, *F.C. Lehmann BT 341* (K). **Risaralda**: Santa Rosa de Cabal, Camino Real between Termales de Santa Rosa and Hda. La Sierra, alt. 2550, 4 Aug. 1988, *J. Wolf 1469* (COL, MO). **Tolima**: Alto de Pozo west of Ibagué, alt. 20 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7475* (SEL). **Nariño**: near the pass between Ipiales and La Victoria, alt. 3300 m, 4 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4664* (K, SEL).
ECUADOR: **Sucumbíos**: between Tulcán and El Carmelo, alt. 2780 m, 8 July 1990, *C.H. Dodson, E. Hagsater, D. Rubio & N. Rivera 18443* (MO). **Napo**: Cuyuja, between Quito and Baeza, alt. 2450 m, 30 June 1986, *C.H. Dodson & T.A. Dodson 16521* (MO). **Tungurahua**: Valle de Chaupe above Baños, alt. 2200 m, 24 July. 1875, *C. Luer, G. Luer & S. Wilhelm 615* (SEL); between Lieto and Triunfo, alt. 2800-3000 m, 25 Aug. 2001. **Morona-Santiago**: between Guarumales and Paute, alt. 2300 m, *S. Dalström, R. Burian & L. Jost 2457* (MO). **Zamora-Chinchipe**: between Loja and Zamora, alt. 1500, 8 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 578* (SEL).
PERU: **Amazonas**: Condorcanqui, Cordillera del Condor, cabeceras del Río Comainas, alt. 1500-1800 m, 16 July 1994, *H. Beltran & R. Foster 891* (SEL, USM). **Cajamarca**: Jaén, above Tabaconas, alt. 2400 m, *A. Weberbauer 6302* (holotype of *P. syringifolia* unknown).

This species is relatively frequent in the Andes of Colombia, Ecuador and Peru. It is distinguished by the medium sized habit with a dense fascicle of small flowers, often both old and in bud, at the base of a thickly coriaceous, more or less horizontal, cordate leaf. The sepals and petals are fleshy and verrucose externally. The concave synsepal is filled with a fleshy, ovate, concave, cellular-papillose lip.

Acronia canidentis (Luer & R.Escobar) Luer, comb. nov.
Ety.: From the Latin *canidentis*, "of a dog-tooth," referring to the appearance of the petals.
Bas.: *Pleurothallis canidentis* Luer & R.Escobar, Orquideología 21: 80, 1998.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 15-36 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, oblong-ovate, acute, 13-17 cm long, 3.5-6 cm wide, the base sessile, deeply cordate. **Inflorescence** a successive, single flower, borne from a reclining spathe 1-1.5 cm long at the base of the leaf; peduncles 2-3 mm long, within the spathe; floral bracts thin, tubular, 8-10 mm long; pedicels 10-12 mm long; ovary 6-7 mm long; **sepals** glabrous, the dorsal sepal yellow, elliptical-ovate, subacute, 17-20 mm long, 9 mm wide, 3-veined, the lateral sepals suffused with purple, connate into an ovate, acute synsepal, 16-17 mm long, 11-12 mm wide, 6-veined; **petals** purple, narrowly triangular, acute, glabrous, entire, 11-13 mm long, 2.5-3 mm wide at the base; **lip** red-brown or orange, suffused with red, thin, ovate, 9-10 mm long, 5.5-6.5 mm wide, the apex rounded, the disc convex with a small glenion at the base, the base subtruncate, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 3 mm broad, the foot thick, 1 mm long, with the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: El Retiro, Hda. Normandía above Colomborquídeas, alt. 2400 m, collected by J. Lopez, cultivated 15 May 1993, *R. Escobar 5228* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16927; same locality and collector, cultivated 26 Mar. 1997, *R. Escobar 8305* (MO), C. Luer illustr. 18536; Cerro Padre Amaya, alt. 2900 m, 16 Jan. 1979, *C. Luer, J. Luer & R. Escobar 3696* (SEL).

This species, apparently endemic in the vicinity of Medellín, Colombia, is most similar to the widely distributed *Acronia bivalvis*. It is distinguished from the latter by large, oblong leaves deeply cordate at the base; a large flower with a three-nerved dorsal sepal; narrowly triangular, acute, diverging petals "slick as a hound's tooth;" and a proportionately large, convex, glabrous lip more than half as long as the synsepal.

Acronia cardiochila (L.O.Williams) Luer, comb. nov.

Ety.: From the Greek *kardiocheilos*, "heart-lipped," referring to the labellum.

Bas.: *Pleurothallis cardiochila* L.O.Williams, Ann. Misouri Bot. Gard. 29: 343, 1942.

Plant medium to large in size, epihytic, caespitose; roots slender. Ramicauls slender, erect, 10-30 cm long, with a tubular sheath below the middle and 2 others at the base. **Leaf** erect, coriaceous, ovate, acute, slightly acuminate, 9-14 cm long, 3.6-7 cm wide, the base sessile, deeply cordate. **Inflorescence** a successive, single flower, borne from a reclining spathe 1.5-2 cm long at the base of the leaf; peduncle ca. 5 mm long; pedicels 17 mm long; floral bract 15 mm long; ovary 7 mm long; **sepals** yellow, the dorsal suffused with dark red, glabrous, the dorsal sepal elliptical-ovate, obtuse, 16-20 mm long, 11-14 mm wide, 7- to 9-veined, the lateral sepals connate into an ovate, obtuse synsepal, 15-18 mm long, 10-15 mm wide, 7- to 9-veined; **petals** oblong to triangular, acute, 10-13 mm long, 2.5-3 mm wide, 3-veined; **lip** deep orange to purple, broadly ovate, obtuse, 6 mm long, 5.5 mm wide, disc slightly convex, the base subtruncate, deflexed 2 mm, hinged to the column-foot; **column** stout, 3 mm long.

PANAMA: **Chiriquí**: Boquete district, Bajo Chorro, alt. ca. 1800 m, 13 Jan. 1938, *M.E. Davidson 119* (Holotype: AMES; Isotype: MO).
COSTA RICA: **Alajuela**: between San Gerardo and Santa Elena, at continental divide, alt. 1550-1800 m, 9 Dec. 1989, *J. Atwood 4093* (MO), C. Luer illustr. 17041; Zelendón, alt. 1250 m, 22 Mar. 1995, *R.L. Dressler s.n.* (MO), C. Luer 17475A.

This species was described from western Panama. No flower remains on the sheet of either the holotype or the isotype, so it is not possible to be positive in deciding its affinities. In the original description, it was declared to be most nearly allied to *Acronia palliolata*, but from the information and illustation provided, it seems more closely allied to the frequent and variable *A. cardiothallis* of Costa Rica. The leaf is deeply cordate, the dorsal sepal is multiveined, the petals are entire and three-veined, and the lip is obtuse and broadly ovate. The primary difference is the oblong petal of *A. cardiochila* and the more triangular petal similar to *A. cardiothallis*, but other variations occur at random among the collections of *A. cardiothallis*.

Acronia cardiocrepis (Rchb.f.) Luer, comb. nov.

Ety.: From the Latin *cardiocrepis*, "heart-shoe," probably referring to the leaf.

Bas.: *Pleurothallis cardiocrepis* Rchb.f., Flora 71: 154, 1888.

Plant medium in size. Ramicauls slender, 12 cm long, **Leaf** ovate, acute, 5-7 cm long, 2.5-3 cm wide, the base cordate; **flowers** pale yellow, small, the dorsal sepal and synsepal ovate, acute; **petals** expanded, narrowly ovate, acute, entire; **lip** ovate, obtuse.

Without locality: flowered in cultivation at the Herrenhausen Botanical Garden by *H. Wendland s.n.* (Holotype: W).

This species remains a mystery. Reichenbach received the specimen from a plant cultivated by Wendland at the Herrenhausen Botanical Garden, Hannover, but without collection data. Three leaves with incomplete ramicauls, and without flowers, are mounted on the type-sheet. Apparently, Reichenbach saw a fresh flower, because a water color painting of a flower is attached to the sheet. Although the flowers are described as pale yellow, the sepals and petals are painted with purple spots, and the lip is covered with purple. No other species of this section is known with spotted flowers, except for narrow-leaved *Acronia cobriformis* from Central America. Only an occasional collection of the Ecuadorian *A. matudana* bears pale, indistinct mottling on the sepals.

Acronia cardiophylax (Rchb.f.) Luer, comb. nov.

Ety.: From the Greek *kardiophylax*, "keeper, or guard of the heart," one of Reichenbach's cryptic jokes?

Bas.: *Pleurothallis cardiophylax* Rchb.f., Flora 71: 154, 1888.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 20-40 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, elliptical ovate, subacute, 10-15 cm long, 3-5 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, successive flower, borne on top of the leaf, subtended by a reclining spathe 1-1.5

cm long; peduncle 5-10 mm long within spathe; floral bracts tubular, 7-10 mm long; pedicels 10-12 mm long; ovary 6 mm long; **sepals** red-purple, glabrous or microscopically cellular, the dorsal sepal elliptical, subacute, shallowly concave, 13-18 mm long, 7-10 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 13-16 mm long, 9-11 mm wide, 6-veined; **petals** linear-oblong, acute, microscopically pubescent and denticulate, 10-12 mm long, 1.5-2 mm wide, 1-veined; **lip** red-purple, elliptical-ovate, obtuse, 9.5-11 mm long, 5-7.5 mm wide, cellular-glandular, microscopically denticulate, slightly convex, the base truncate with a glenion, with a broad cavity on the end, articulated to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick with the anther, rostellum and stigma apical.

COLOMBIA: Without collection data, but probably collected in Colombia because most importations cultivated in London at that time were from Colombia, cultivated in London by *Low s.n.* (Holotype: W).
ECUADOR: **Loja**: Quebrada Honda above Valladolid, alt. 1450 m, 14 Mar. 1986, *D. D'Alessandro 536* (MO), C. Luer illustr. 17209.
PERU: **Cajamarca**: trail from Chorro Blanco to San Andrés, Cutervo National Park, alt. 2210-2240 m, 15 Sept. 1991, *A. Gentry, C. Diaz & R. Ortiz 74835* (MO).

This species is uncommon in its wide distribution in the Andes. It is distinguished by the large habit with ovate, acute, cordate leaves. The flower is similar to a large-flowered *Acronia bivalvis* with the dorsal sepal three-veined, and the petals smooth to microscopically denticulate, and oblong. The lip is proportionately larger, oblong-ovate, slightly convex, microscopically cellular-papillose with minutely denticulate margins. It fills much of the space as it lies atop the synsepal. It is most easily distinguished from *A. macrocardia* by the three-veined dorsal sepal.

Acronia cardiostola (Rchb.f.) Luer, comb. nov.

Ety.: From the Greek *cardiostoli*, "heart-ornament," in allusion to the heart-shaped leaf.
Bas.: *Pleurothallis cardiostola* Rchb.f., Bonplandia 2: 26, 1854.

Syn.: *Pleurothallis choroniensis* Schnee, Rev. Fac. Ing. Agron. 1: 116, 1952.
Ety.: Named for the Alto de Choroní where it was collected.

Syn.: *Pleurothallis lanigera* Luer & Hirtz, Lindleyana 3: 146, 1988.
Ety.: From the Latin *laniger*, "bearing wool," referring to the densely pubescent sepals and petals.

Plant small, medium-sized to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a close, tubular sheath below the middle and 2-3 shorter sheaths at the base, 8-40 cm long. **Leaf** spreading, horizontal to acutely deflexed, coriaceous, broadly ovate, 4-15 cm long, 2-5 cm wide, the apex acute, the base sessile, deeply cordate with the lobes often incurved. **Inflorescence** a fascicle of solitary, successive flowers borne from an erect to suberect conduplicate spathe, 8-18 mm long, 3-7 mm broad, at the base of the leaf; peduncles 1-2 mm long, confined within the spathe with the floral bracts and pedicels; floral bracts 4-6 mm long; pedicels 4-12 mm long; ovary 3-10 mm long, cellular-glandular; flowers resupinate or non-resupinate, yellow to purple or brown; **sepals** cellular-glandular to coarsely pubescent, the middle sepal ovate, broadly ovate to transversely ovate, subacute to obtuse, more or less convex, 8-12 mm long, 8-10 mm wide, 5- to 7-veined, the lateral sepals connate into an ovate to broadly ovate, obtuse, more or less convex synsepal, 8-12 mm long, 7-10 mm wide, 6-veined; **petals** more or less revolute above the middle, elliptical, acute, 5-9.5 mm long, 1-4 mm wide, 3-veined, more or less pubescent with ciliate-denticulate margins; **lip** not erect, triangular-ovate, thick, the apex and basal angles rounded, 3-5 mm long, 3-4.5 mm wide across the base, the disc slightly cleft toward the apex, minutely verrucose between thickened margins below the middle, the base concave, with a short, thick, claw, firmly hinged to the column-foot; **column** stout, 0.75-1 mm long, 1.5-2 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

Representative collections:
VENEZUELA: **Dist. Fed.**: "Caracas," alt. 5,000-6,000 ft., July 1850, *H. Wagener 46* (Holotype: W); near Colonia Továr, 1854-55, *A. Fendler 1479* (AMES, K, MO). **Aragua**: Alto de Choroní, alt. 1200 m, *L. Schnee 364* (holotype of *P. choroniensis*: MY).
COLOMBIA: **Antioquia**: around Sonsón, alt. 2200-2600 m, Dec. 1891, *F.C. Lehmann s.n.* (K); Frontino, Cerro El Pladeado, alt. 2200 m, 12 May 1983, *R. Escobar 2570* (SEL). **Santander**: east of Bucaramanga toward Berlin, alt. 2280 m, 5 Nov. 1981, *C. Luer & R. Escobar 6549* (SEL). **Meta**: near Villavicencio, alt. 1,600 ft., Mar. 1946, *C. Sandeman 5871* (K).
ECUADOR: **Imbabura**: Hda. Yura Cruz north of Ibarra, alt. 3700-3800 m, 25 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 6488* (AAU). **Napo**: Papallacta, alt. 3100-3300 m, 15 May 1968, *G. Harling, G. Storm & B. Ström 10326* (GB); forest around Bermejo oil fields, alt. 850 m, 9 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11732* (MO). **Morona-Santiago**: between Gualaceo and Limón, alt. 2000 m, 22 Mar. 1974, *G. Harling & L. Andersson 12698, 12699* (GB).

Guayas: between Chacayacu and Huahuiducal, above Naranjal, alt. 800-1700 m, Oct. 1889, *F.C. Lehmann 7066* (K). **Azuay**: north of Sevilla de Oro, alt. 9,000-10,000 ft., *W.H. Camp E-4677* (S). **Loja**: Nudo de Parqué Nacionál Podocarpus, above Nudo de Cajanuma, alt. 2800-3000 m, 15 May 1988, *B. Øllgaard, J.E. Madsen & L. Christensen 74104* (AAU, QCA). **Zamora-Chinchipe**: north of Valladolid toward Yangana, alt. 2100 m, 24 July 1985, *C.H. Dodson, A. Embree, & D. D'Alessandro 16048* (MO); south of Zamora, alt. 1100 m, 4 Feb. 1987, *C. Luer, J. Luer, & A. Hirtz 12606* (holotype of *P. lanigera*: MO); Cordillera del Condor, east of Los Encuentros, alt. 1300 m, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13474* (MO, QCNE).

PERU: **Piura**: Huancabamba, Jan. 1883, *E. André 511* (K). **Pasco**: Oxapampa, above Paurcatamba bridge, alt. 1150-1600 m, *D.E. Bennett 449* (SEL).

BOLIVIA: **Cochabamba**: Chapare, between Cochabamba and Villa Tunari, alt. 1750 m, 25 Jan. 1980, *C. Luer, J. Luer & R. Vásquez 4951* (SEL). **La Paz**: Larecaja, between Guanay and Tipuani, alt. 1200 m, 23 Jan. 1988, *C. Luer, J. Luer, R. Vásquez, J. Solomon, T. & D. Mulder & A. Vogel 12917* (MO).

This species is relatively frequent in its wide distribution through the Andes at relatively low altitudes usually below 2000 meters above sea level from Venezuala into Bolivia. Described from a collection by Wagener near Caracas, Venezuela, it had small, non-resupinate, light yellow flowers, but the illustration published by Reichenbach (*Xenia Orchidacea* I: 72, t. 28 II, 1854) depicts a larger plant consistent with collections found in the Andes.

Both vegetatively and florally, this species varies greatly. Similar to all the species in this section, the juvenile leaves are erect, elliptical, acute and simply cuneate at the base. The mature, cordate leaves are acutely deflexed on the ramicaul with the basal lobes more or less erect and incurved, sometimes with margins meeting over the spathe. The leaf beyond the middle varies from flat to incurved.

The flowers emerge, becoming either resupinate or non-resupinate, from a suberect, conspicuous spathe. Although the color of the flowers is usually purple or purple-brown, occasional yellow flowers occur. The size of the flowers also varies greatly as seen in many species of widely distributed species of pleurothallids. Most commonly the sepals are between seven and ten millimeters long, but variations with sepals 12 millimeters long occur. Dwarf variations with sepals about five millimeters long have been seen. The extremes in size are illustrated by Dunsterville on the illustration published for *Acronia carrenoi*, an extreme, miniature variation of *A. cardiostola*.

The large, broad, seven-veined dorsal sepal is more or less convex. The sides of the often narrower synsepal commonly recurve. The petals are more or less spathulate and reflex against the dorsal sepal, and are variably pubescent, from microscopically cellular-glandular to densely pubescent. The lip is relatively small, tucked beneath the column and not erect. It is more or less thickly triangular with thick margins and a comparatively large, basal depression.

Together with *Acronia lilijae*, *A. cardiostola* forms a perplexing complex of varying shapes and sizes of the leaves and floral parts and is closely related to *A. lilijae*. Numerous specimens intermediate between the two extremes have been seen. The two species can usually be recognized, but the vast majority of collections exhibit characters mixed from both extremes. A variation with non-deflexed, broadly cordate, flat leaves, and an erect spathe, combined with markedly pubescent sepals and petals was described as *Pleurothallis lanigera*. What might be merely a geographical variation from Bolivia and Paraquay with flatter leaves, smaller flowers and a synsepal with markedly revolute sides was described originally as *P. alopex*.

Acronia cardiothallis (Rchb.f.) Luer, comb. nov.

Ety.: From the Greek *cardiothallis*, "heart-stems," probably referring to the cordate leaf,
Bas.: *Pleurothallis cardiothallis* Rchb.f., Bot. Zeitung 15: 158, 1857.

Syn.: *Humboldtia cardiothallis* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis subulata* Rolfe, Bull. Misc. Inform. 137, 1892.
Ety.: From the Latin *subulatus*, "subulate," referring to the petals.

Syn.: *Pleurothallis acutipetala* Schltr., Repert. Spec. Nov. Regni Veg. 10: 353, 1912.
Ety.: From the Latin *acutipetalus*, "with acute petals," referring to the petals.

Syn.: *Pleurothallis costaricensis* Schltr., Beih. Bot. Centralbl. 34(2): 395, 1918, not Rolfe.
Ety.: Named for Costa Rica where the species was collected.

Syn.: *Pleurothallis schlechteriana* Ames, Sched. Orch. 2: 24, 1923, nom. nov. for *A. costaricensis*.
Ety.: A new name for *A. costaricensis*, named for the author Rudolf Schlechter.

Plant large, epiphytic, caespitose; roots numerous, slender. Ramicauls slender to stout, 15-45 cm long, often spotted below, with a close, tubular sheath below the middle and 1-2 others at the base. **Leaf** erect to spreading, coriaceous, ovate, acute, acuminate, 9-20 cm long, 3.5-8 cm wide, the base deeply cordate, sessile. **Inflorescence** a solitary flower, usually produced singly, from a reclining spathe 1-3 cm long; peduncle 3-5 mm long within the spathe; pedicel 5-10 mm long; floral bract 4-5 mm long; ovary 5-10 mm long; **sepals** yellow-green, yellow, yellow-orange, red-orange, red, or purple, glabrous to microscopically pubescent externally, the dorsal sepal broadly ovate to suborbicular, obtuse, 11-18 mm long, 8-14 mm wide, 7- to 9-veined, the lateral sepals connate into a broadly ovate to suborbicular synsepal, 10-15 mm long, 10-15 mm wide, 8- to 10-veined; petals triangular-falcate, acute, 7-10 mm long, 2-3 mm wide, 3-veined; **lip** yellow, orange, red or purple, oblong-ovate to quadrate or subpandurate, 5-9 mm long, 4-6 mm wide, the apex obtuse, usually abruptly apiculate, smooth with thickened, finely pubescent margins, the base truncate, broadly hinged to the column-foot, column stout, 1-2 mm long, 2-3 mm wide.

MEXICO: near Huchenalgo, July 1841, *Liebmann 7303* (orchid nr. 348-350) (C). **Chiapas**: Montebello lake district, alt. 1700 m, 22 Aug. 1953, *F.B. Johnson 353-138* (SEL).
GUATEMALA: **Alta Verapaz**: Pansamalá, alt 3,800 ft., Feb. 1886, *H. von Türckheim 860* (holotype of *P. acutipetala* destroyed at B; lectotype here designated: AMES s.n., illustr. of type); near Cobán, alt. 4,000 ft., 20 Sept. 1920, *H. Johnson 934* (AMES).
EL SALVADOR: Cerro Montecristo, alt. 2200 m, *F. Hamer 242*.
NICARAGUA: 1853-56, *C. Wright 12* (BR, K). **Rivas**: Isla Ometepe, Volcán Maderas, *McGillivary 110* (SEL). **Jinotega**: Finca Sta. Fe, alt. 870 m, *A. Heller 1649* (SEL). **Matagalpa**: between Finca La Isla and Finca Bavaria, alt. 990 m, *A. Heller 9225* (SEL). **Zelaya**: between Cerro El Inocente and Cerro Saalsya, alt. 1100 m, *W.D. Stevens 6720* (MO).
COSTA RICA: **Alajuela**: San Ramón, ca. 1869, *A. Endres 52, 53* (W); San Ramón, alt. 1500-1600 m, May 1913, *A. Tonduz s.n.* (holotype of *A. costaricensis* destroyed at B; lectotype here designated: AMES 23674, illustr. of type); Zapote, alt. 1350 m, 31 Oct. 1938, *A. Smith H1302* (SEL).

PANAMA: **Chiriqui**: Fortuna dam site, alt. 1000 m, Oct. 1976, *R.L. Dressler s.n.* (SEL); Cerro Colorado, north of San Felix, alt. 1350 m, 18 Aug. 1975, *R.L. Dressler 5121* (SEL). **Veraguas**: near the continental divide above Santa Fe, alt. ca. 750 m, 5 Sept. 1976, *C. Luer & R.L. Dressler 1262* (SEL); Río Dos Bocas, northwest of Santa Fe, alt. 500 m, 15 Nov. 1974, *R.L. Dressler 4783* (SEL).
COLOMBIA: **Santander**: between Santa Barbara and Guaca, alt. 2400 m, 6 Nov. 1981, *C. Luer & R. Escobar 6592* (SEL). **Choco**: Carmen de Atrato, alt. 2000 m, collected Dec. 1974 by Fathers S. Restrepo and P. Ortiz, flowered at Colomborquídeas, 11 Oct. 1977, *C. Luer 1994* (SEL). **Valle de Cauca**: between Cali and Buenaventura, alt. 1500 m, 29 June 1965, *C.H. Dodson & H. Hills 3186* (SEL).
ECUADOR: **Carchi**: El Pailon, below Maldonado, alt. 800 m, 29 Nov. 1979, *M.T. Madison 7161* (SEL).
Without collection data, from Baron Hruby, Peckau, Bohemia, cultivated 15 Jan. 1892 by *F. Sander s.n.* (holotype of *P. subulata*: K).

This large, frequent and variable species was first described by Reichenbach from horticultural material introduced into Germany by way of England from an unknown source. It is a frequent and variable species in Central America, uncommon in the Andes. Some variations appear distinct, and some have acquired names. All are characterized by a large, cordate leaf, and a large flower with broad, obtuse, multiveined sepals. The petals are more or less triangular, acute and three-veined. The shape of the lip varies from oblong-ovate, subquadrate or shield-shaped. The apical margin varies from being slightly to conspicuously, thick-margined.

Acronia carduela Luer, sp. nov.

Ety.: Named for *Carduelis*, the genus of gold finches, in allusion to the bright yellow of the flowers.

Species haec *A. cedrinorum* (Luer & Dalström) Luer affinis, sed foliis profunde cordatis, floribus laete aureis, petalis labelloque denticulatis differt.

Plant large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 30-35 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, narrowly ovate, acute, slightly acuminate, 10-16 cm long, 3-3.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a single flower or a fascicle of 2- to 3-simultaneous, bright yellow flowers, subtended by a spathe 10-15 mm long; peduncles 2-3 mm long, concealed within the spathe; floral bracts thin, tubular, 8 mm long; pedicels 8-9 mm long; ovary 6 mm long; **sepals** glabrous, the dorsal sepal broadly ovate, subacute, 17 mm long, 12 mm wide, 7-veined, the lateral sepals connate into an ovate, acute synsepal, 15 mm long, 10 mm wide, 6-veined; **petals** oblong, acute, minutely denticulate, 10 mm long, 2 mm wide, 1-veined; **lip** prone, elliptical, obtuse, denticulate, 7 mm long, 4.5 mm wide, the disc slightly convex with a glenion at the base, the base subtruncate, deflexed, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 3 mm wide, the foot thick, with the anther, rostellum and stigma apical.

EDUADOR: **Pichincha**: among roadside vegetation along the new road from Quito to Santo Domingo, alt. ca. 2500 m, Mar. 1976, *C. Luer, J. Luer & P. Taylor 266* (Holotype: SEL).

The most remarkable feature of this species is the pure, bright, canary yellow color of the relatively large flowers. Even if this should prove to be merely an albino color variation of the ubiquiitous *Acronia bicolor*, the broad, seven-veined dorsal sepal; a smaller synsepal; oblong, minutely denticulate petals; and a broadly elliptical, denticulate lip offer a combination of characters that sets it apart from its relatives. Vegetatively, the species is large with deeply cordate, more or less convex, horizontal leaves with the flowers sitting on top like little, golden frogs.

Acronia carnosa (Braid) Luer, comb. nov.

Ety.: From the Latin *carnosus*, "fleshy," referring to the column.

Bas.: *Pleurothallis carnosa* Braid, Bull. Misc. Inform. 200, 1924.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-10 cm long, with a tubular sheath below the middle and 2-3 others at the base. **Leaf** coriaceous, ovate, subacute to obtuse, 5-8 cm long, 2-3.5 cm wide. **Inflorescence** a single, successive flower, borne the base of the leaf, the spathe unknown; peduncles not seen; floral bracts tubular, ca. 5 mm long; pedicels ca. 5 mm long; ovary 3-5 mm long; **sepals** glabrous, the dorsal sepal narrowly ovate, acute, 10-14 mm long, 3.75-5.5 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, 10-13 mm long, 5 mm wide, 4-veined; **petals** linear-oblong, acute, 5-7 mm long, 1 mm wide, 1-veined, microscopically serrate; **lip** elliptical-ovate, obtuse, 3.5-6.5 mm long, 2.75-3.75 mm wide, minutely verrucose, minutely denticulate, the base subtruncate with a glenion, concave on the end, hinged to the column-foot; **column** stout, terete, 2 mm long, 2 mm wide, the foot thick, with the anther, rostellum and stigma apical.

WITHOUT LOCALITY: history and habitat unknown, cultivated at the Royal Botanic Gardens, Kew, flowering at intervals in 1924, s.n. (Holotype: K), C. Luer illustr. 20813.
COLOMBIA: **Valle de Cauca**: between Cali and Buenaventura, alt. 1200 m, 11 Oct. 1982, *L. Albert, J. Folsom, J. Brand & D. Sánchez 2574* (HUA, MO), C. Luer illustr. 20810.

This species was described from a plant without collection data that was cultivated at the Royal Botanic Gardens, Kew. Flowers were harvested five times during 1924, but no vegetative material was preserved. The illustration of the leaf and ramicaul are estimations from the given dimensions. A recent collection from southern Colombia closely resembles this species in size and shape. It is related to the variable *Acronia microcardia*-complex, but it is distinguished from the latter by sepals that are only about three times longer than wide, instead of much longer. It approaches *A. scabrilinguis* which has proportionately wider sepals. The lip is elliptical and covered by minute verrucosities. It is also similar to *A. bivalvis*, but the sepals and petals are proportionately longer and narrower.

Acronia carrenoi (Carnevali & I.Ramirez) Luer, comb. nov.

Ety.: Named in honor of Victoriano Carreno E., a co-collector of the species.

Bas.: *Pleurothallis carrenoi* Carnevali & I.Ramirez, Ernstia 44: 18, 1987.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-12 cm long, with a close, tubular sheath below the middle and 2-3 shorter sheaths at the base. **Leaf** spreading, horizontal, coriaceous, ovate, 4-7.5 cm long, 1.5-2.2 cm wide, the apex acute, the base sessile, cordate. **Inflorescence** a fascicle of solitary, successive flowers borne from a suberect conduplicate spathe, 5-10 mm long, 2-3 mm broad, at the base of the leaf; peduncles 1-2 mm long, confined within the spathe; floral bracts 4-5 mm long; pedicels 4-5 mm long; ovary 2-3 mm long; **sepals** light yellow-green, glabrous, the middle sepal broadly ovate, obtuse, more or less convex, 4.5-5 mm long, 3.75-4.5 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 3.75-4.5 mm long, 3.25-4.2 mm wide, 4-veined; **petals** elliptical, acute, 3.5 mm long, 1 mm wide, 1-veined, cellular-glandular, with the margins minutely denticulate; **lip** thick, cordate-ovate, with the apex and basal angles rounded, 2 mm long, 2 mm wide across the base, the disc lightly cleft toward the apex, minutely verrucose between thickened margins below the middle, the base subcordate, with a short, thick, claw, firmly hinged to the column-foot; **column** stout, 0.75 mm long, 1.5 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

VENEZUELA: **Sucre**: Paria peninsula, cloud forest of the headwaters of Río Cumaná, alt. 850-890 m, 21 Feb. 1980, *J.A. Steyermark, R. Liesner & V. Carreno E, 121458* (Holotype: VEN; Isotype: MO); above Melenas, southeast of Cerro de Humo, alt. 730-1050 m, 1 Dec. 1979, *J.A. Steyermark & R. Liesner 120895* (MO, NY, VEN); between La Laguna and Roma, northeast of Irapa, 800-1000 m, 5 Mar. 1966, *J.A. Steyermark 95081* (MO, VEN); Cerro de Río Arriba, Los Positos, alt. 700 m, 10 Dec. 1966, *J.A. Steyermark & M. Rabe 96402* (AMES, MO, VEN); cultivated by G.C.K. Dunsterville in El Hatillo, 25 July 1982, *C. Luer 8091* (SEL).

This taxon is hardly more than a dwarf variation of *Acronia cardiostola* that occurs in an isolated population on the Paria peninsula of coastal Venezuela. Vegetatively, it is smaller than the average *A. cardiostola*, and the flowers are among the smallest, but variations with nearly equally small flowers are seen in Ecuador where great variations are found. The latter are treated as *A. cardiostola*. Otherwise, the flowers of *A. carrenoi* are morphologically compatible with *A. cardiostola*.

Acronia cassidata (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *cassidatus*, "helmeted," referring to the deeply concave dorsal sepal.

Bas.: *Pleurothallis cassidata* Luer & R.Escobar, Orquideología 21: 82, 1998.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 25-35 cm long, with a close, tubular sheath on the lower third and 2-3 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 8.5-10 cm long, 2.5-3 cm wide, the base sessile, cordate, with the basal lobes ca. 1 cm deep. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 1.5-2 cm long; peduncles less than 5 mm long, concealed within the sheath; floral bracts thin, tubular, 5 mm long; pedicels ca. 5 mm long; ovary 5 mm long; **sepals** microscopically ciliate, the dorsal sepal dull dark yellow, red along the veins, broadly elliptical-ovate, obtuse, deeply concave, 16 mm long, 9 mm wide unexpanded, 7-veined, the lateral sepals connate into an ovate, subacute lamina, 13 mm long, 9 mm wide, 4-veined; **petals** red, decurved, subfalcate-oblong, subacute, minutely denticulate, 7.5 mm long, 2 mm wide, 1-veined; **lip** erect, thick, transversely subovate, 4 mm long, 4.5 mm wide, smooth, the margins minutely fringed, the broadly rounded and erect below the middle, the sides revolute above the middle, the apex obtuse, concave beneath with a small callus beneath the tip, the disc smooth, the base densely short-pubescent and shallowly broadly concave on the end to accommodate the bulbous column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, bulbous, pubescent, the anther, rostellum and stigma apical.

COLOMBIA: Without collection data: flowered in cultivation at Colomborquídeas 26 Mar. 1997, *R. Escobar 8289* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 18531.

This species joins the ranks of taxa closely related to *Acronia grandiflora*. It is characterized by a narrowly ovate, acuminate leaf; a large flower with a deeply cucullate dorsal sepal; broad, single-veined, minutely denticulate petals; and a short, broad, thick lip with decurved margins below the apex.

Acronia cedrinorum (Luer & Dalström) Luer, comb. nov.

Ety.: From the Latin *cedrinorum*, "of the cedars," referring to the Los Cedros Reserve in Ecuador where the species was discovered.

Bas.: *Pleurothallis cedrinorum* Luer & Dalström, Lindleyana 11: 152, 1996.

Syn.: *Pleurothallis embreei* Luer & Hirtz, Orquideología 22: 263, 2003.

Ety.: Named for the late Al Embree, co-collector of this species.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-25 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, lightly acuminate, 8-14 cm long, 1.5-4 cm wide, the base sessile, rounded to subcordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 10-13 mm long; peduncles 2-3 mm long, concealed within the spathe; floral bracts thin, tubular, 8-10 mm long; pedicels 12-25 mm long; ovary densely short-pubescent, 5 mm long; **sepals** yellow to light brown, microscopically pubescent externally, the dorsal sepal elliptical-ovate, acute to subacute, 20-22 mm long, 10-11 mm wide, 7- to 11-veined, the lateral sepals connate into an ovate, acute synsepal, 17-24 mm long, 10-19 mm wide, multiveined; **petals** purple to brown, obliquely oblong-subfalcate, acute, entire, 10-15 mm long, 1.8-2.5 mm wide, 1-veined; **lip** prone, purple, elliptical, obtuse, microscopically cellular-glandular, 7-10 mm long, 4.5-5.5 mm wide, the disc featureless except for a small glenion at the base, the base subtruncate, shortly deflexed on the end, hinged to the column-foot; **column** stout, 1.5 mm long, 2.5 mm wide, the foot thick, pubescent, with the anther, rostellum and stigma apical.

EDUADOR: **Imbabura**: Los Cedros Reserve, epiphytic in wet forest along a ridge, alt. 1400 m, 23 Jan. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1741* (Holotype: MO), C. Luer illustr. 16628; same area, alt. 1700 m, 21 Jan. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1714, 1719* (MO); same area, alt. 1400 m, 23 Jan. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1739* (MO); Selva Alegre, alt. 2730 m, *C. Luer, J. Luer & A. Hirtz 6043* (SEL). **Carchi**: east of Maldonado, alt. 2000 m, 2 Apr. 1984, *C. Luer, S. Dalström & T. Höijer 9892* (MO). **Esmeraldas**: epiphytic in wet forest between Lita and San Lorenzo, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz & C. Dodson 12392* (MO). **Pichincha**: above Tandapi, alt. 2100 m, 31 Mar. 1985, *C. Luer, J. Luer, A. & X. Hirtz 11028* (MO); farm road below Tandapi, alt. 1450 m, 1 Mar. 1986, *C. Luer, C. Dodson, A. Hirtz & A. Embree 12056* (MO);between Chiriboga and Santo Domingo, alt. 1500 m, 28 May 1988, *C. Luer & A. Hirtz 13722* (MO); same area, cultivated by F L Stevenson, collected by *M. Whitten 91006* (MO), C. Luer illustr. 16322; West Iliniza, Cerro Azul, alt. 2800 m, 23 Jan. 1987, *C. Luer, J. Luer & A. Hirtz 12473* (MO). **Napo**: near Lumbaqui, epiphytic in forest remnant around the Bermejo oil fields, alt. 850 m, 9 Feb. 1986, *C. Luer, J. Luer, A. Hirtz & A. Embree 11759* (holotype of *A. embreei*: MO); between Río Jatunyacu and Pano, alt. 800 m, 22 Feb. 2004, *A. Hirtz & X. Hirtz 8677* (MO).

This species has no single distinctive feature, but the combination of characters sets it sufficiently apart from the hoard of others. Vegetatively, the species is large, but not distinctive. The flowers are relatively large with multiveined sepals; the one-veined petals are subfalcate and entire; and the reclining lip is elliptical, obtuse, slightly convex, microscopically cellular-glandular, and with a glenion at the base between calli similar to *Acronia fossulata*. Some collections referred to this species differ in various, minor details. One of these collections is *Pleurothallis embreei*, which has a proportionately smaller lip.

Acronia chama (Luer) Luer, comb. nov.

Ety.: From the Latin *chama*, "a cockle," in allusion to the bivalved, shell-like flower.

Bas.: *Pleurothallis chama* Luer, Selbyana 3: 264, 1977.

Plant medium in size to large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 20-35 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, ovate, acute, slightly acuminate, 8-12 cm long, 5-7 cm wide, the base sessile, deeply cordate, more or less conduplicate. **Inflorescence** a single flower, subtended by a spathe 10-13 mm long, at the base of the leaf, from the apex of the ramicaul; peduncles 2-3 mm long, concealed within the spathe; floral bracts thin, tubular, 5-6 mm long; pedicels 7-8 mm long; ovary 6-7 mm long; **sepals** pale yellow-brown speckled with red, glabrous, microscopically ciliate, the dorsal sepal broadly elliptical, obtuse, 12 mm long, 8 mm wide, 7-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 10 mm long, 11 mm wide; **petals** purple, oblong, acute, denticulate, incurved, 8 mm long, 3 mm wide, 1-veined; **lip** red-brown, thick, flat, oblong, obtuse, microscopically denticulate, 4.5 mm long, 2.5

mm wide, the disc finely verrucose above the middle, with a large, yellow, smooth, elliptical area to either side of a glenion at the base, the base truncate, slightly curved on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: terrestrial on road embankment east of the pass between Loja and Zamora, alt. ca. 2000 m, 6 Mar. 1977, *C. Luer, J. Luer & K. Cordoba 1554* (Holotype: SEL; Isotype: MO).

Known only from the original collection from southeastern Ecuador, this species is characterized by a large, deeply cordate leaf more or less compressed at the base. The flower is similar to that of *Acronia cordata*, but larger with the dorsal sepal 7-veined. The petals are large and denticulate. The lip is flat, oblong and obtuse with a smooth, elliptical area to either side of the glenion.

Acronia chaparensis Luer & R.Vásquez, sp. nov.

Ety.: Named for the province of Chapare in the department of Cochabamba, where the species was collected.

Species haec *Acroniae microcardiae* (Rchb.f.) Luer affinis, sed sepalis proportione latioribus et labello grandi fere aequilato quam synsepalo distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 6-14 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 7-10 cm long, 2-2.3 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower lying against the leaf, borne from a spathe 13-15 mm long at the base of the leaf; peduncles 3-4 mm long, concealed within the spathe; floral bracts thin, tubular, 5 mm long; pedicels 8 mm long; ovary 3 mm long; **sepals** translucent light green, lightly veined in red, glabrous, the dorsal sepal narrowly ovate, acute, 19 mm long, 5.5 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, 19 mm long, 5 mm wide, 4-veined, with the margins revolute; **petals** light red, widely spread, narrowly linear-triangular, acute, 7 mm long, 1 mm wide, 1-veined, minutely subdenticulate; **lip** red, oblong, obtuse, 10 mm long, 4.5 mm wide, minutely verrucose, the base subtruncate, with a small glenion, concave on the end, hinged to the column-foot; **column** stout, terete, 1.5 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

BOLIVIA: **Cochabamba**: Chapare, collected and cultivated by Roberto Vásquez, flowered in cultivation 15 Jan. 1984, *R. Vásquez s.n.* (SEL), C. Luer illustr. 9353.

This species from central Bolivia is allied to the numerous variations of the frequent *Acronia microcardia*, but the sepals are not as proportionately narrow. Most distinctive is the large, red lip that is more than half as long as the synsepal. In the natural position, the synsepal appears significantly narrower than the lip, because the margins of the synsepal are revolute. When expanded, however, the synsepal is only slightly wider than the labellum.

Acronia chavezii (Luer) Luer, comb. nov.

Ety.: Named for Carlos Chavez who discovered this species.

Bas.: *Pleurothallis chavezii* Luer, Lindleyana 11: 72, 1996.

Plant large, epiphytic, caespitose; roots numerous, slender. Ramicauls slender, erect, 15-26 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect, coriaceous, ovate, acute, 8-12 cm long, 4-5.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, successive flower, subtended by a spathe 11-13 mm long; peduncles 1-3 mm long, concealed within the sheath; floral bracts tubular, 10 mm long; pedicels 12-15 mm long; ovary 4 mm long; **sepals** red-purple, glabrous, the dorsal sepal broadly elliptical, obtuse, 8.5 mm long, 6.5 mm wide expanded, 3-veined, the lateral sepals connate into an oblong, acute synsepal, 8.5 mm long, 3 mm wide, 6-veined; **petals** brown, narrowly elliptical-oblong, acute, minutely denticulate, 6.5 mm long, 1.5 mm wide, 1-veined, narrowed above the base, with a basal lobule lying adjacent to the column; **lip** narrowly subpandurate, acute, 4.25 mm long, 1.5 mm wide at the base, narrowed to 0.75 mm above the base, the base with a shallow, circular concavity, with a minute callus on the anterior margin, truncate, with a deflexed claw, hinged to the column-foot, the undersurface thickened along the midvein, greatest above the middle; **column** 1 mm long, 1.5 mm wide, the foot broad, with the anther, rostellum and stigma apical.

COSTA RICA: **Guanacaste**: epiphytic in Parqué Nacional Guanacaste, Estación Biológica Volcán, Estación Pitilla, alt. 1100 m, 24 Oct. 1990, *C. Chavez 438* (Holotype: K; Isotypes: CR, MO), C. Luer illustr. 17282.

Vegetatively, this species is indistinguishable from many others with an ovate, acute, deeply cordate leaf borne by a longer ramicaul. The flowers are of average size for the section with a broadly elliptical, concave, three-veined dorsal sepal as long as the narrow, acute synsepal. The petals are narrowly elliptical, acute and minutely denticulate with a lobule at the base. The lip is narrowly pandurate, acute at the apex, narrowed above the dilated base. The basal fourth is filled with a shallow, circular cavity.

Acronia cobriformis (L.O.Williams) Luer, comb. nov.

Ety.: From the Latin *cobriformis*, "like a cobra," in allusion to the flower.

Bas.: *Pleurothallis cobriformis* L.O.Williams, Ann. Missouri Bot. Gard. 27: 277, 1940, as *cobraeformis*.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls purple, slender, erect, 5-8 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, thickly coriaceous, narrowly elliptical, narrowly obtuse to subacute, 6-9 cm long, 1.2-1.8 cm wide, the base sessile, cuneate, more or less compressed. **Inflorescence** a single flower, produced successively, subtended by a spathe ca. 5 mm long at the base of the leaf; peduncles 6-8 mm long; floral bracts thin, tubular, 3 mm long; pedicels 4 mm long; ovary 4 mm long; **sepals** glabrous, the dorsal sepal pale yellow with large purple spots, broadly ovate, deeply concave, 7-8 mm long, 5-6 mm wide, 5-veined, the lateral sepals light green, suffused with rose, connate into an ovate, subacute to obtuse synsepal, 7 mm long, 4-5 mm wide; **petals** purple, obliquely ovate-subfalcate, acute, lacerate, 5-6 mm long, 1.5-1.75 mm wide; **lip** purple, cordate-trilobed, 2-3.5 mm long, 2.5-3.75 mm wide, the apex transversely obtuse, shortly acuminate, minutely denticulate, the basal lobes rounded, flanking the column, the disc shallowly concave with a small glenion at the base, the base concave on the end, hinged to the column-foot; **column** stout, 2 mm long, the foot thick, obsolescent, with the anther, rostellum and stigma subapical.

PANAMA: **Coclé**: Vicinity of El Valle de Antón, alt. ca. 600 m, 19 Dec. 1939, *A.H. Allen 2057* (Holotype: AMES, Isotype: MO); El Valle de Antón, alt. ca. 900 m, Mar. 1976, *C. Luer & H. Butcher 1035* (SEL). **Colón**: Santa Rita Ridge, 30 Dec. 1971, *J.D. Dwyer & A. Gentry 9389* (MO).

This species is apparently endemic and uncommon in central Panama. It is characterized by narrowly oblong, thick, narrowly sessile leaves, with purple ramicauls about the same length, and a single flower. The dorsal sepal is purple-spotted and deeply cucullate over the dark purple, deeply cordate lip with lobes flanking the column, and purple, finely lacerate petals descending from either side.

Acronia complanata (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *complanatus*, "flattened," referring to the flat flower appressed to the leaf.

Bas.: *Pleurothallis complanata* Luer & Hirtz, Lindleyana 11: 154, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 16-22 cm long, with a close, tubular sheath on the lower fourth and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 8.5-10.5 cm long, 2.5-3 cm wide, the base sessile, cordate. **Inflorescence** a single, successive, flower, borne on the surface of the leaf, subtended by a spathe ca. 10 mm long; peduncles ca. 1 mm long, concealed within the spathe; floral bracts tubular, 5-6 mm long; pedicels 6-7 mm long; ovary 3 mm long; **sepals** glabrous, the dorsal sepal light yellow-green, elliptical-obovate, obtuse to rounded at the apex, 9 mm long, 4 mm wide, 3-veined, the lateral sepals light purple, connate into an ovate, acute synsepal, 7.5 mm long, 4.5 mm wide, faintly 6-veined; **petals** red-purple, narrowly linear-triangular, acute, entire, 4 mm long, 0.5 mm wide, 1-veined; **lip** red-purple, oblong-ovate, obtuse, 4.4 mm long, 2.5 mm wide, the surface minutely verrucose, slightly convex, the base subtruncate with a medium-sized glenion, with a short, deflexed claw, hinged to the column-foot; **column** stout, terete, 1-1.5 mm long, 1.5 mm wide, the foot thick, with the anther, rostellum and stigma apical.

EDUADOR: **Morona-Santiago**: epiphytic in forest north of Macas along Río Upano, alt. 1100 m, 15 Jan. 1989, *C. Luer, J. Luer, A. Jesup, A. Jesup, A. Hirtz & S. Ortega 13917* (Holotype: MO).

Vegetatively, this species from the eastern slope of central Ecuador is similar to many others: a narrowly ovate, acute, cordate leaf borne by a long, slender ramicaul. The flowers are of average size for the section. Like *Acronia applanata*, the flower lies against the leaf. The dorsal sepal is obovate and three-veined with a rounded apex, and longer than the synsepal. The petals are entire and subulate; and the oblong-ovate lip is minutely verrucose and slightly convex.

Acronia compressa (Luer) Luer, comb. nov.

Ety.: From the Latin *compressus*, "compressed," referring to the laterally compressed ramicaul.
Bas.: *Pleurothallis compressa* Luer, Lindleyana 11: 75, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, sharply compressed above, decurrent within the leaf for 1-1.5 cm, 20-25 cm long, with a tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** deflexed when mature, coriaceous, concave, ovate, acuminate above the middle, acute, 11-15 cm long, 3-4 cm wide above the base, 1.5 mm wide above the middle, the base shallowly cordate. **Inflorescence** a fascicle of successive single flowers, subtended by a broad, suberect spathe 10-12 mm long; peduncle 1-2 mm long, thick, deep within the spathe; pedicels 9-10 mm long, mostly concealed within the sheath; floral bracts tubular, ca. 5 mm long; ovary 9-10 mm long; **sepals** light brown, glabrous, the dorsal sepal elliptical-ovate, subacute, with the sides reflexed, 8 mm long, 5 mm wide expanded, 3-veined, the lateral sepals connate into a suborbicular synsepal, longitudinally concave centrally with the sides reflexed, 6.5 mm long, 7 mm wide expanded, 6-veined; **petals** light brown, reflexed, narrowly oblong-subfalcate, acute, entire, 6.5 mm long, 1-1.5 mm wide, 1-veined; **lip** brown, thick, transversely triangular, obtuse, 2.5 mm long, 3.25 mm wide, with the margins thickened, concave within the margins, the disc with a prominent, pyramidal glenion, flat and microscopically pubescent on top, with a glenion anteriorly, the base truncate, hinged to the column-foot; **column** white, stout, 1.5 mm long, 2.5 mm wide, the foot thick, pubescent, with the anther, rostellum and stigma apical.

COSTA RICA: **Cartago**: Turrialba, without further collection data, flowered in cultivation at the Lankester Botanical Garden, Cartago, 7 Mar. 1995, *C. Luer 17380* (Holotype: CR: Isotype: MO).

This species differs from all the other members of this section by the sharply compressed ramicauls upon which the deflexed leaf is decurrent for at least one centimeter, similar to some species of *Ancipitia*. Vegetatively, it is also similar to *Acronia peculiaris* of neighboring Panama. The small, brown flowers protrude from the spathe and face downward. The sides of the dorsal sepal and the synsepal, as well as the subfalcate petals, are reflexed. The pyramidal callus of the triangular lip fits beneath the column with the glenion and viscidium in apposition.

Acronia conicostigma (Luer) Luer, comb. nov.

Ety.: From the Greek *conicostigma*, "cone-shaped stigma," refetting to the stigmatic lobes.
Bas.: *Pleurothallis conicostigma* Luer, Selbyana 1: 236, 1975.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-18 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, lightly acuminate, 6-10 cm long, 2.5-4 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, borne on top of the leaf, subtended by a reclining spathe 10-15 mm long; peduncles 2-4 mm long, within the spathe; floral bracts tubular, 3-5 mm long; pedicels 10-15 mm long; ovary 5-6 mm long; **sepals** yellow, glabrous, the middle sepal broadly elliptical, obtuse, 6-7 mm long, 4-5 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 6 mm long, 5-6 mm wide, 4-veined; **petals** yellow, elliptical to elliptical-oblong, acute to subacute, 4-4.5 mm long, 1.5-2.5 mm wide, 1-veined; **lip** yellow, suffused with purple or brown centrally, thick, ovoid-subquadrate, 2.25 mm long, 2.75 mm wide, broadly obtuse, the disc filled above the middle with a pair of thick, rounded, protuberant calli, the base acutely deflexed below a glenion, hinged to the column-foot; **column** stout, 1.5 mm long, 2.5 mm wide, the foot thick, the anther, rostellum and stigma apical, the stigmatic lobes conical and protuberant.

EDUADOR: **Pichincha**: terrestrial on road embankment above Santo Domingo, alt. 1500 m, 2 Mar. 1975, *C. Luer & R. Kent 301* (Holotype: SEL); same area, 17 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 569* (SEL). **Imbabura**: south of Lita, road to Sta. Rosa de Cachaco, alt. 1300 m, 17 Mar. 1991, *C. Luer, J. Luer, A. Hirtz et al. 15166* (MO).

This species occurs in northwestern Ecuador at relatively low altitudes. A non-resupinate, yellow flower is borne on the dorsum of a more or less horizontal, cordate leaf. The middle sepal and uppermost synsepal are obtuse and the petals are relatively large. Most distinguishing are the thick, subquadrate lip with a pair of prominent calli, and the protruding, cone-shaped stigmatic lobes.

Acronia constricta (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *constrictus*, "constricted," referring to the labellum.

Bas.: *Pleurothallis constricta* Luer & R.Escobar, Orquideología 21: 84, 1998.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 35-40 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, oblong-ovate, acute, attenuate, 18-19 cm long, 5-5.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a successive, single flower, borne from a reclining spathe 2-2.5 cm long at the base of the leaf; peduncles ca. 5 mm long within the spathe; floral bracts thin, tubular, ca. 15 mm long; pedicels 25 mm long; ovary 6-7 mm long; **sepals** microscopically cellular-ciliate, the dorsal sepal yellow, suffused with red at the base, elliptical-ovate, subacute, 25 mm long, 13 mm wide, 7-veined, the lateral sepals red, connate into an ovate, concave, subacute synsepal, 20 mm long, 16 mm wide, 10-veined; **petals** red, narrowly triangular, acute, oblique, glabrous, entire, 12 mm long, 2.5 mm wide at the base; **lip** dark red, broadly ovate, 5 mm long, 5.5 mm wide, constricted above the middle with decurved margins, the apex truncate with the tip decurved with a tubercle beneath, the disc convex with a small glenion at the base, the base broadly truncate, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 2.75 mm broad, the foot thick, 1 mm long, with the anther, rostellum and stigma apical.

COLOMBIA: **Santander**: Virolín, El Taladro, alt. 2000 m, collected by E. Valencia, May 1992, cultivated at Colomborquídeas, Feb. 1993, *R. Escobar 5297* (Holotype: MO), C. Luer illustr. 18537.

This species, apparently endemic in the Eastern Cordillera of Colombia, is most distinguished by the large habit with acute, long-cordate leaves and a large flower. The dorsal sepal is 25 millimeters long with seven veins, and the petals are subfalcate and smooth similar to those of *Acronia canidentis*. The most distinctive lip is comparatively small, broadly ovate, constricted above the middle with decurved margins, and a truncate apex.

Acronia convexa (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *convexus*, "convex," referring to the shape of the lip.

Bas.: *Pleurothallis convexa* Luer & Hirtz, Lindleyana 11: 155, 1996.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 25-35 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect, coriaceous, ovate, acute, lightly acuminate, 11-14 cm long, 5-6.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a spathe ca. 15 mm long; peduncles 4-5 mm long; floral bracts tubular, 7-8 mm long; pedicels 12-13 mm long; ovary 6 mm long; **sepals** yellow, purple or brown, subcarinate, glabrous, the dorsal sepal oblong, obtuse, 8 mm long, 2.75 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 7 mm long, 4.5 mm wide, 4-veined; **petals** brown, obliquely oblong, acute, minutely denticulate, 4.5 mm long, 1 mm wide, 1-veined; **lip** yellow, purple or brown, oblong-obovate, 3.25 mm long, 1.75 mm wide, convex above the middle with the rounded apex obscurely 3-lobulated, the undersurface concave, the base subtruncate, transversely thickened with a small glenion, flattened on the end, hinged to the column-foot; **column** stout, terete, 1 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: epiphytic in wet forest between Mindo and Maldonado, alt. 900 m, Aug. 1989, *A. Hirtz 4488* (Holotype: MO), C. Luer illustr. 16236. **Esmeraldas**: epiphytic in wet forest between Lita and San Lorenzo, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz & C. Dodson 12392* (MO); Reserva Endesa, near Puerto Vicente Maldonado, alt. 800 m, 25 Mar. 1985, *G. Harling & L. Andersson 23308* (GB).

Vegetatively, this large species from lowland, northwestern Ecuador resembles *Acronia cordata*. The flowers are of average size for the section with an oblong, obtuse, three-veined dorsal sepal; minutely denticulate, oblong petals; and a glabrous, obovate lip with a convex, obscurely trilobulate apex. The undersurface is concave without the usual development of a more or less conical protuberance beneath the tip.

Acronia cordata (Ruiz & Pav.) Luer, subsp. **cordata**, Gen. Sp. Orch. 5, 1830.

Bas.: *Humboldtia cordata* Ruiz & Pav., Syst. Veg. 234, 1798.

Ety.: From the Latin *cordatus*, "cordate," referring to the shape of the leaves.

Syn.: *Stelis cordata* (Ruiz & Pav.) Willd., Sp. Pl. 4: 140, 1805.

Syn.: *Pleurothallis monocardia* Rchb.f., Bonplandia 3: 72, 1855.

Syn.: *Humboldtia monocardia* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis cardiophylla* Schltr., Repert. Spec. Nov. Regni Veg. 14: 128, 1915.

Ety.: From the Greek *kardiophyllon*, "heart-leaved," referring to the leaf.

Syn.: *Zosterophyllanthos monocardius* (Rchb.f.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium to large, epiphytic, caespitose; roots slender. Ramicauls slender to stout, erect, 10-40 cm or more long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, ovate to broadly ovate, obtuse, shortly acuminate, 6-14 cm long, 5-8 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, several sometimes produced simultaneously, borne on top of the leaf, subtended by a broad, reclining spathe 5-10 mm long; peduncles 2-3 mm long, concealed within the spathe; floral bracts tubular, 5-8 mm long; pedicels 6-10 mm long; ovary 4-7 mm long; flowers gaping, red, orange, yellow, brown to purple, **sepals** fleshy, glabrous, the dorsal sepal elliptical, subacute to obtuse, 4-8.5 mm long, 4-7 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 3.5-7 mm long, 3.5-9 mm wide, 6-veined; **petals** oblong, acute to subacute, flanking the lip, minutely denticulate, 3-6 mm long, 1-1.75 mm wide, 1-veined; **lip** thick, ovate, 2-3 mm long, 2-3 mm wide, the apex obtuse to rounded with a low, subconical callus beneath, the margins microscopically denticulate, the disc slightly convex, sometimes microscopically cellular-glandular, the base broadly truncate, usually with a small glenion, flattened on the end, hinged to the column-foot; **column** stout, terete, 1-1.5 mm long, 1.5-2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

(Representative collections of *A. cordata sensu lato*).

PERU: **Huánuco**: Pillao, on rocks and trees above Muña, 1787, *Ruiz & Pavón s.n.* (Holotype: M). **Amazonas**: Condorcanqui, Cordillera del Condor, Puesto de Vigilancia Alfonso Ugarte, alt. 1000 m, 20 July 1994, *H. Beltran & R. Foster 1089* (SEL, USM). **Huancabamba**: *Mathews 1903* (W); Bitaco valley, Pacific slope of western cordillera, alt. 4,500 ft., 30 Nov. 1963, *P.C. Hutchison & J.K. Wright 3133* (F, K, M, MO, NY, UC, US). **Cajamarca**: San Ignacio, San José de Lourdes, alt. 1900 m, 22 Jan. 2001, *R. Vásquez et al. 26476* (MO). **Huánuco**: Carpish Hills, between Huánuco and Tingo Maria, alt. 2100 m, 10 Aug. 1980, *C. Luer, J. Luer, H. & W. Königer 5355* (SEL). **San Martin**: Rioja, Pardo Miguel, Centro Poblado Aguas Verdes, alt. 1260 m, 24 June 1998, *I. Sánchez V. et al 9487* (CPUN, MO). **Pasco**: Oxapamba, Pajonal, alt. 2630 m, 9 Oct. 1982, *D.N. Smith 2548* (MO). **Cuzco**: Urubamba, between Machu Picchu and Aguas Calientes, alt. 2000 m, 28 Nov. 1987, *P. Nuñez V. 8681* (MO).

BOLIVIA: **La Paz**: Nor Yungas, Coripati, 20 Apr. 1897, *M. Bang 2151* (holotype of *P. rhopalocarpa*: AMES; isotypes: LE, M, US); Sur Yungas, along Río Unduavi, alt. 3100 m, 29 Jan. 1980, *C. Luer, J. Luer & R. Vásquez 5017* (SEL); Murillo, below dam at Lago Zongo, alt. 2200 m, 16 Dec. 1982, *J. Solomon 9140* (MO, SEL).

ECUADOR: **Carchi**: above Maldonado, alt. 1450-1650 m, 1 June 1978, *M.T. Madison et al. 4861* (AAU, SEL). **Sucumbíos**: southeast of El Carmelo, alt. 2500 m, 17 May 1981, *C. Luer, J. Luer & A. Hirtz 6051* (SEL). **Imbabura**: Selva Alegre, alt. 2430 m, 1 May 1981, *C. Luer, J. Luer & A. Hirtz 6294* (SEL). **Pichincha**: Andes Quitenses, ad pontem Agoyán, 1857-59, *R. Spruce 5882* (W). Mt. Pichincha, Mar. 1900, *A. Sodiro 3* (lectotype of *A. cardiophylla*: BR); *A. Sodiro 3b* (Syntype: QPLS); near Calacalí, alt. 3000 m, 28 Nov. 1880, *F.C. Lehmann 177* (W). **Cañar**: between Duran and Tambo, alt. 500 m, 20 Feb. 1960, *C.H. Dodson 26* (SEL). **Cotopaxi**: west of El Corazón, alt. 1200 m, 18 Feb. 1979, *C. Luer, J. Luer & A. Hirtz 4009* (SEL). **Napo**: Cuyuja, between Papallacta and Baeza, alt. 2800-2900 m, 5 June 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 6861* (AAU). **Pastaza**: Mera, alt. ca. 1100 m, 25 May 1968, *G. Harling, G. Storm & B. Ström 9832* (GB). **Tungurahua**: Río Negro, 31 May 1968, *G. Harling, G. Storm & B. Ström 9992* (GB). **Chimborazo**: east of Pallatanga, alt. 2200 m, 13 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4785* (SEL). **Azuay**: north of Sevilla de Oro, alt. 8,000-9,000 ft., 27 July 1945, *W.H. Camp E-4537* (MO, NY, SEL); Sevilla de Oro, alt. 2400 m, 18 Apr. 1968, *G. Harling, G. Storm & B. Ström 8432* (GB). **Morona-Santiago**: new road between Limón and Gualaquiza, near Río Calagras, alt. 1600 m, 19 Sept. 1980, *C. Luer et al. 5492* (SEL). **Loja**: north of Loja, alt. ca. 2500 m, 10 Feb. 1978, *C. Luer, J. Luer & M. Portilla 2535* (SEL). **El Oro**: Zaruma, alt. 2100-2600 m, *U. Molau & B. Eriksen 3127* (GB). **Zamora-Chinchipe**: near pass south of Yangana, alt. 2400 m, 22 Sept. 1980, *C. Luer, J. Luer & H.H. Morgan 5537* (SEL).

COLOMBIA: **Chocó**: Alto de Los Galápagos, San José del Palmar, alt. 2000 m, collected by E. Valencia, cultivated at Colomborquídeas, 26 Mar. 1997, *R. Escobar 8302* (MO).
Norte de Santander: Toledo, Alto de Santa Inez, alt. 2100 m, 23 May 1982, *C. Luer, R. Escobar & D. Portillo 7958* (SEL). **Santander**: east of Bucaramanga toward Berlin, alt. 2280 m, 3 Nov. 1981, *C. Luer & R. Escobar 6551* (SEL). **Antioquia**: Cocorná, along Río Cocorná, alt. 1600 m, 24 Apr. 1983, *C. Luer et al. 8800* (SEL). **Risaralda**: Pueblo Rico, Alto de Linea, alt. 2100 m, 11 May 1993, *C. Luer, J. Luer & R. Escobar 16788* (MO). **Tolima**: southern slope of Mt. Tolima, north of Ibague, alt. 2600 m, 21 Apr. 1982, *C. Luer, J. Luer & R. Escobar 7493* (SEL). **Valle del Cauca**: Alto de Los Galápagos, south of the pass, alt. 1750 m, 13 May 1993, *C. Luer, J. Luer, R. Escobar & A. DeWilde 16813* (MO). **Cauca**: Bolívar, San Juan de Villalobos, alt. 1600-1800 m, collected by J. Aguirre, cultivated at Colomborquídeas, 26 Mar. 1997, *R. Escobar 8304* (MO). **Nariño**: Reserva La Planada, alt. 1500-1800 m, 30 Apr. 1988, *Olga de Benavides 9656* (MO, PSO). **Putumayo**: between Sibundoy and Mocoa, alt. 2200 m, 20 Jan. 1979, *C. Luer, J. Luer & O. Ospina 3721* (SEL).

Treated as a large species-complex, this taxon is frequent and variable in its wide distribution from the coastal range of Venezuela through all three cordilleras of Colombia and south through the Andes of Ecuador, Peru and Bolivia. It was first collected in Peru by Ruiz and Pavón on their search for medicinal plants in the eighteenth century.

After having examined many dozens of both fresh and freshly pickled flowers, and many dozens of rehydrated flowers from dry specimens, and no fewer than 30 illustrations made from them, I conclude that at least three recognizable taxa are hopelessly mixed, most having been identified as *Acronia cordata*. All are similar with large, ovate, deeply cordate leaves, and small flowers of the basic "A. bivalvis" design. Individuals cannot be identified without knowing the proportions of the sepals and details of the petals and lip. Therefore, the collections cited include all three taxa, which are treated here as subspecies. Only when their identity is possible, are the collections properly cited separately from *A. cordata*.

Acronia cordata is identified by its large, horizontal, broadly ovate, shortly acuminate, deeply cordate leaves, although some other species produce similar leaves that are indistinguishable from those of *A. cordata*. One to several small, widely expanded, simultaneous flowers are produced in a cluster at the base of the leaf. In typical *A. cordata*, the dorsal sepal is glabrous, elliptical-ovate, obtuse, three-veined, and between four and eight millimeters long. The synsepal is usually a little broader, and nearly the same length. The petals are more or less oblong and minutely denticulate. The lip is ovate, obtuse, minutely or microscopically cellular-glandular or denticulate, and with a small glenion. All colors and combinations of colors occur. Reichenbach's *P. monocardia* and Schlechter's *P. cardiophylla* belong here. *Pleurothallis rhopalocarpa*, treated here as a subspecies of *A. cordata*, is distinguished by the dorsal sepal that is obovate, obtuse or rounded at the apex, occasionally incompletely 5-veined, and distinctly longer than the synsepal. It commonly lies flat against the leaf. The petals are oblong-triangular and acute. *Pleurothallis trachysepala*, also treated as a subspecies of *A. cordata*, is distinguished by scabrous, ciliate sepals, and oblong, ciliate petals. Flowers with characters intermediate among the above three taxa are not uncommon.

In *Pleurothallis* of *Flora of Venezuela* by Foldats, 15(2): 347, fig. 312, 1970, a drawing of *Acronia bivalvis (Pleurothallis stenocardium)* is identified as *P. monocardia [= A. cordata]*. In *Venezuelan Orchids Illustrated* 6: 334, 1976, and in *Selbyana* 3: 77 and 85, 1976, illustrations of *A. cordata* subsp. *rhopalocarpa* are identified as *P. cordifolia*, a species described as having "linear-setaceous" petals, which indicates otherwise. A drawing by Dunsterville labelled *P. monocardia* is rather typical of *A. cordata*.

Acronia cordata subsp. **rhopalocarpa** (Schltr.) Luer, comb. nov.

Bas.: *Pleurothallis rhopalocarpa* Schltr., Repert. Spec. Nov. Regni Veg. 10: 43, 1922.
Ety.: From the Greek *rhopalocarpus*, "with club-shaped fruit," referring to the capsules.

Plant and **Inflorescence** similar to the type; flowers widely expanded, variously colored; **sepals** fleshy, glabrous, the dorsal sepal obovate, obtuse to round at the apex, 7-10 mm long, 5-7 mm wide, 3-veined (sometimes with a partial additional vein), the lateral sepals connate into a broadly ovate to transversely ovate, obtuse synsepal, 6-7 mm long, 6-8 mm wide, 4-veined; **petals** incurved, elliptical-oblong, acute, minutely denticulate, 4-6 mm long, 1.5-2 mm wide, 1-veined; **lip** thick, oblong-subquadrate, 2.5-3.5 mm long, 2-3 mm wide, obtuse to round at the apex, the disc flat and more or less cellular-glandular above the middle, shiny-glabrous below the middle, the base broadly truncate, usually with the glenion indistinct, flattened on the end, hinged to the column-foot.

BOLIVIA: **La Paz**: Nor Yungas, Coripati, 20 Apr. 1897, *M. Bang 2151* (holotype of *P. rhopalocarpa*: AMES; isotypes: LE, M, US).
ECUADOR, COLOMBIA, and PERU: Numerous collections are intermixed with collections with more typical flowers.

Vegetatively indistinguishable, this variation of *Acronia cordata*, common in Colombia, Ecuador, and Peru is recognized, because the flower appears distinctly different, although the differences are small. The flower often lies expanded against the leaf with the obovate dorsal distinctly longer than the wider synsepal. The lip is more oblong than ovate, and it is shiny smooth below the middle. In the typical flower, the surface of the lip is microscopically cellular-glandular.

Acronia cordata subsp. **trachysepala** (Kraenzl.) Luer., comb. nov.

Bas.: *Pleurothallis trachysepala* Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 178, 1905.
Ety.: From the Greek *trachysepalon*, "rough sepal," referring to the verrucose sepals.

Syn.: *Pleurothallis brachyblephara* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 72, 1921.
Ety.: From the Greek *brachyblepharos*, "short eyelashes." referring to the ciliated petals.

Syn.: *Pleurothallis platycardium* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7: 529, 1921.
Ety.: From the Greek *platykardium*, "broad heart," referring to the leaves.

Syn.: *Pleurothallis erymnochila* Luer, Selbyana 3: 102, 1976.
Ety.: From the Greek *erymnochilos*, "a fenced lip," referring to the border of the lip.

Plant and **Inflorescence** similar to the type; flowers more or less expanded, variously colored; ovary minutely verrucose; **sepals** fleshy, shortly ciliate and more or less sparsely pubescent, the dorsal sepal elliptical, obtuse, 5-9 mm long, 4-6 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 4.5-7 mm long, 5-8.5 mm wide, 4-veined; **petals** oblong, acute, long-ciliate, often pubescent, 4-6 mm long, 1-1.5 mm wide, 1-veined; **lip** dark red-purple or brown, thick, ovate-subquadrate, 2.75-3.5 mm long, 2.5-3 mm wide, minutely denticulate to long-ciliate, often minutely verrucose, with the apex broadly obtuse, the disc shallowly concave, with a small glenion, the base truncate, flattened on the end, hinged to the column-foot.

PERU: **Cajamarca**: Hualgayoc, near Chugur northwest of Hualgayoc, alt. 2700-3000 m, without date, *A. Weberbauer 4095* (Holotype destroyed at B: Neotype here designated: photo at AMES).
Cuzco: rocky slopes near Sandia, alt. 2300 m, Mar. 1902, *A. Weberbauer 635* (Holotype of *P. blepharopetala* destroyed at B).
ECUADOR: **Pichincha**: terrestrial on road embankment, Quito to Santo Domingo, alt. 2000 m, 15 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 473* (holotype of *P. erymnochila*: SEL).
COLOMBIA: **Cundinamarca**: between Bogotá and Fusagasuga, alt. 1770 m, *R. Schnitter s.n.* (holotype of *P. platycardium*: presumed to be at S). Numerous other collections are intermixed with those with more typical flowers.

Vegetatively indistinguishable, this common variation of *Acronia cordata*, common in Colombia, Ecuador, and Peru is recognized, because the flower with its more or less verruculose, long-ciliate sepals, petals and lip differs sufficiently from the typical flower.

Acronia cordifolia (Rchb.f. & Wagener) Luer, comb. nov.

Ety.: From the Latin *cordifolius*, "cordate-leaved," referring to the shape of the leaves.

Bas.: *Pleurothallis cordifolia* Rchb.f. & Wagener, Bonplandia 2: 26, 1854.

Syn.: *Humboldtia cordifolia* (Rchb.f. & Wagener) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-30 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, broadly ovate, subacute to obtuse, shortly acuminate, 5-13 cm long, 3-6.5 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a narrow spathe 5-10 mm long; peduncles 1-2 mm long within the spathe; floral bract tubular, 5-9 mm long; pedicel 5-8 mm long; ovary 2.5-4 mm long; **sepals** yellow, yellow-green, to light brown, sometimes yellow with brown suffusion along veins, glabrous, the dorsal sepal elliptical-obovate, obtuse, 4-7 mm (rarely 8 mm) long, 2.5-4 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 4-6.5 mm (rarely 7.5 mm) long, 3.5-5.5 mm wide, 4-veined; **petals** narrowly linear-oblong, acute, microscopically erose to entire, 3-4.5 mm long, 0.5-0.8 mm wide, 1-veined; **lip** red, brown or purple, ovate, obtuse, 2-3.75 mm long, 1.5-3 mm wide, the disc flat to shallowly concave, the base subcordate with a glenion, shallowly concave on the end, hinged to the column-foot; **column** semiterete, 1-1.5 mm long, 1-1.75 mm wide, the foot obsolescent, with the anther and stigma apical.

VENEZUELA: **Dist. Fed.**: near Caracas, without specific locality, alt. 4,000 ft., 1850, *H. Wagener 42* (Holotype: W). **Anzoátegui**: Dist. Freeites, Cerro Peonía, alt. 2300 m, 3 Dec. 1981, *G. Davidse & A. González 19907* (MO).
COLOMBIA: insufficient material.
PANAMA: **Coclé**: El Valle, alt. ca. 1000 m, cultivated 28 Jan. 1982, *C. Luer 6812* (SEL). **Veraguas**: *C. Luer 1141* (holotype of *P. veraguasensis*: SEL). **Chiriquí**: San Vicente, Sept. 1976, *C. Luer & H. Butcher 1197* (SEL). **Bocas del Toro**: Valle de Silencia, no alt., 10 Aug. 1979, *T. Antonio 1621* (MO).
ECUADOR: **Carchi**: between Maldonado and Chical, alt. 1500 m, 15 Jan. 1992, *C. Luer, J. Luer, A. Jesup, A. Jesup & A. Hirtz 16029* (MO). **Esmeraldas**: west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer et al. 12396* (MO). **Pichincha**: between Angamarca and Corazón, alt. 1500 m, 17 Feb. 1979, *C. Luer, J. Luer & A. Hirtz 4001* (SEL). **Pastaza**: north of Puyo, Mar. 1976, *C. Luer 945* (SEL).
Morona-Santiago: Tena *C. Luer 549, 638* (SEL); Río Calagras, alt. 1600 m, 19 Sept. 1980, *C. Luer 5497* (SEL). **Azuay**: orange grove, old road to Cuenca, 20 Feb. 1977, *C. Luer & J. Luer 1481* (SEL). **Zamora-Chinchipe**: Cordillera del Condor: east of Los Encuentros, alt. 1500 m, 19 May 1988, *C. Luer, A. Hirtz et al. 13482* (MO, QCNE).

This species is an example of insufficient material to draw positive conclusions. Apparently, it is variable in a wide distribution from Central America into the Andes. It is characterized by a broadly ovate leaf acuminate at the apex and cordate at the base with a small, usually yellow flower with a red, brown or purple lip. Except for the smaller size and the petals, the flower is "standard" as seen in the *Acronia bivalvis*-complex. The most distinctive petals are narrow, less than one millimeter wide, aptly described by Reichenbach (1854: 26) as "linearisetaceis." Some populations in the Andes are larger florally than the usual, but the petals are always less than one millimeter wide. The illustration in *Venezuelan Orchids Illustrated* by Dunsterville and Garay, 6: 335, 1976, identified as *Pleurothallis cordifolia* is *A. cordata* subsp. *cordata*.

Acronia coriacardia (Rchb.f.) Luer, comb. nov.

Ety.: From the Latin *coriacardius*, "leathery-cordate," referring to the leaves.

Bas.: *Pleurothallis coriacardia* Rchb.f., Bonplandia 2: 26, 1854.

Syn.: *Humboldtia coriacardia* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Pleurothallis leontoglossa* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 106, 1920, not Rchb.f. 1849.

Ety.: From the Greek *leontoglossa*, "lion-tongue," in allusion to the labellum.

Syn.: *Pleurothallis smithii* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 114, 1920.

Ety.: Named for H.H. Smith who collected this species.

Syn.: *Pleurothallis corralensis* Garay, Arquiv. Jard. Bot. Rio de Janeiro 13: 42, 1954, new name for *P. leontoglossa* Schltr.

Ety.: Named for the community of Corrales near where the species was collected.

Plant large, epiphytic, caespitose; roots slender, numerous. Ramicauls slender to stout, erect, 20-45 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate to narrowly ovate, acute, lightly acuminate, 6-16 cm long, 3-8 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, several sometimes produced simultaneously, borne on top of the leaf, subtended by a spathe 8-15 mm long; peduncles 2-4 mm long, concealed within the spathe; floral bracts tubular, 5-10 mm long; pedicels 6-14 mm long; ovary 4-6 mm long, sometimes subverrucose; flowers bilabiate, yellow-brown to red-brown, occasionally purple, **sepals** fleshy, glabrous, sometimes microscopically pubescent within, the dorsal sepal ovate, acute to subacute, 10-15 mm long, 5-6 mm wide, 3-veined, the lateral sepals connate into an ovate, acute to subacute synsepal, 10-15 mm long, 6-8 mm wide, 4-veined; **petals** colored as the sepals, narrowly triangular, oblique, acute, minutely denticulate, 4-7 mm long, 1-1.5 mm wide, 1-veined; **lip** oblong-ovate, 5-7 mm long, 2-3.25 mm wide, the apex obtuse with a low, subconical callus beneath, the margins microscopically denticulate, the disc slightly convex, more or less microscopically subverrucose, the base subtruncate, with a small glenion, flattened on the end, hinged to the column-foot; **column** stout, terete, 1-1.5 mm long, 1.5 mm wide, the foot thick, with the anther, rostellum and stigma apical.

Representative collections:
COLOMBIA: **Cauca**: above Popayán, on trees on the ascent to Sotara, *Th. Hartweg s.n.* (Holotype: K); around Corrales, eastern slopes of central Andes of Popayán, alt. 2000-2800 m, *F.C. Lehmann 8207* (holotype of *P. leontoglossa* presumably destroyed at B: lectotype here designated: K; isotype: AMES). **Cesar**: Santa Marta, 1898-1901, *H.H. Smith 2362* (holotype of *P. smithii*: K; Isotypes: AMES, NY, US), C. Luer illustr. 16988. **Antioquia**: Antioquia, between San Pedro and Don Matius, alt. 2500-2700 m, 15 Sept. 1985, *C.H. Dodson, R. Escobar & E. Valencia 15305* (MO). **Cundinamarca**: between Bogotá and La Calera, alt. 2650-3000 m, 27 Nov. 1947, *F.A. Barkley, H. García-Barriga & R. Vanegas 17C784* (COL, MO). **Santander**: east of Bucaramanga toward Berlin, alt. 2400 m, 3 Nov. 1981, *C. Luer & R. Escobar 6554* (SEL). **Santander del Sur**: west of Velez toward Landazuri, alt. 2150 m, *C. Luer, J. Luer, R. Escobar & E. Valencia 10117* (MO). **Aurauca**: Monte de Toro, alt. 2900 m, D. Portillo, 30 May 1982, *C. Luer 8006* (SEL). **Quindio**: west slope of Alto de La Linea, alt. 2930 m, 25 Nov. 1982, *R. Escobar & W. Mesa 4224* (SEL). **Chocó**: south of the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, R. Escobar et al. 17688* (MO). **Tolima**: La Linea between Ibague and Armenia, alt. 3500 m, 20 Oct. 1922, *C. Luer & R. Escobar 8490* (SEL). **Caldas**: between Manizales and Termales, alt. 3250 m, 15 Oct. 1972, *A.M. Cleef 6020* (AAU, COL). **Nariño**: Páramo del Campanero, south of Pasto, alt. 3100 m, 22 Jan. 1979, *C. Luer, J. Luer & H. Martinez 3761* (SEL). **Putumayo**: between La Cocha and Sibundoy, alt. 2700 m, 30 July 1978, *C. Luer et al. 3070* (SEL); between Sibundoy and Mocoa, alt. 2200 m, 20 Jan. 1979, *C. Luer et al. 3727* (SEL).
VENEZUELA: **Mérida**: Sierra Nevada, alt. 6,000 ft., 1842, *J. Linden 674* (K).
ECUADOR: **Carchi**: north of El Playón, alt. 3100 m, 20 Mar. 1991, *C. Luer, J. Luer & A. Hirtz 15192* (MO). **Sucumbíos**: east of Santa Barbara, alt. 2700 m, 4 Mar. 1974, *G. Harling & L. Andersson 12452* (GB). **Pichincha**: Quito to Santo Domingo, alt. 3,400 m, 22 Oct. 1961, *C.H. Dodson & L.B. Thien 1018* (SEL). **Imbabura**: west of Lita, alt. 700 m, 19 Mar. 1991, *C. Luer, J. Luer & A. Hirtz 15163* (MO). **Napo**: valley of Río Papallacta, below Cuyuja, alt. 2600-2800 m, 20 May 1947, *F.R. Fosberg 27483* (AMO). **Cotopaxi**: east of Salcedo, alt. 3100 m, 12 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4773* (SEL). **Tungurahua**: Llanganates, El Triunfo, alt. 2800 m, Feb. 1991, *A. Hirtz 5144* (MO). **Chimborazo**: east of Riobamba toward Altar, alt. 3100 m, 14 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4794* (SEL). **Morona-Santiago**: between Sigsig and Gualaquiza, alt. 2800-3000 m, 12 Apr. 1968, *G. Harling, G. Storm & B. Ström 8234* (GB). **Cañar**: between Azoges and Pindilig, alt. 3000 m, 8 June 1979, *B. Løjtnant, A. & U. Molau 14243, 14301* (AAU, GB). **Azuay**: Páramo de Tinajillas, south of Cuenca, alt. 11,000 ft., 17 Mar. 1945, *W.H. Camp E-2280* (AMES, NY). **Loja**: Cerro Villanaco, west of Loja, alt. 8,000-9,000 ft., 9 Oct. 1944, *I.L. Wiggins 10970* (US). **Zamora-Chinchipe**: between Loja and Zamora, alt. 2400 m, 16 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 3609* (AAU, AMES); Cordillera del Condor, east of Guismé, alt. 1500 m, 18 Feb. 1986, *C. Luer, J. Luer, A. Hirtz et al. 11918* (MO).
PERU: **Cajamarca**: Celendin, Canyon of the Marañon above Balsas, alt. 2930 m, 24 May 1964, *P.C. Hutchison & J.K. Wright 5343* (AMES, F, G, K, LE, M, MICH, MO, P, UC, US, USM). **San Martín**: Huallaga, valley of Río Apisoncho, alt. 2900 m, 19 July 1965, *A.C. Hamilton & P.M. Holligan 1023* (K).
BOLIVIA: **Cochabamba**: Chapare, Cochabamba to Villa Tunari, alt. 1850 m, 17 Jan. 1984, *C. Luer, J. Luer & R. Vásquez 9391* (SEL).

This large species was first collected by Hartweg in the mountains above Popayán, Colombia. The type-collection at Kew (*Hartweg s.n.*) consists of a single ramicaul with the leaf and a few flowers. It is mounted beside an unrelated species [*Ancipitia dunstervillei* (Foldats) Luer] collected around Quito, Ecuador, by Jamesonon. Both specimens are cited as #45 for *Pleurothallis coriacardia* by Lindley in his *Folia Orchidaceae* in 1859.

Acronia coriacardia is found frequently in the Andes from Venezuela through Ecuador and south into Peru and Bolivia. In *Venezuelan Orchids Illustrated* Dunsterville's drawing identified as *Pleurothallis undulata* is this species. The only lingering question is the number of veins in the sepals which was omitted both in the drawing and in the description. In the Orchidaceae by Foldats of the *Flora of Venezuela*, an illustration of this species (noted for three veins in the dorsal sepal) is identified as *P. linguifera*, a species with multiple veins in the dorsal sepal.

Vegetatively pleomorphic, *Acronia coriacardia* is similar to many other species in the section. Although the ramicauls are consistently considerably longer than the leaves they bear, the deeply cordate leaves vary considerably in size, length and width. Vegetatively, some specimens with large, broad leaves resemble *A. cordata*. The leaves of smaller, narrower-leaved specimens resemble numerous other species.

The flowers, however, are sufficiently constant in morphology to permit easy recognition. One or several, relatively large, brownish (sometimes "polished" or striped), bilabiate, resupinate flowers are produced simultaneously atop the leaf. The dorsal sepal and synsepal are ovate and acute. The dorsal is three-veined; the synsepal is convex with slightly recurved sides with the lip exposed. The petals are narrowly triangular, acute, usually minutely denticulate, shorter than the lip, and commonly pointed laterally and downward from the junction of the sepals. The lip is lingulate and obtuse, at least twice as long as broad. The surface is slightly convex and variably glabrous to minutely or microscopically verrucose with denticulate margins. A small glenion is present above the deflexed base.

Acronia correllii (Luer) Luer, comb. nov.

Ety.: Named in honor of Donovan Stewart Correll, noted author of works on American botanical subjects, who described this species.

Bas.: *Pleurothallis correllii* Luer, Selbyana 3: 88, 1976.

Syn.: *Pleurothallis pansamalae* var. *triangulabia* Correll, Lloydia 10: 210, 1947, not *P. triangulabia* C.Schweinf. 1937.

Syn.: *Zosterophyllanthos correllii* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-14 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, slightly acuminate, 4-6.5 cm long, 1.5-2.5 cm wide, the base sessile, cordate. **Inflorescence** a single, successive flower, subtended by a spathe 6-9 mm long at the base of the leaf; peduncles 2-3 mm long, concealed within the spathe; floral bract tubular, 4-6 mm long; pedicel 4-7 mm long; ovary 3 mm long; **sepals** pale yellow, glabrous, the dorsal sepal ovate, subacute to obtuse, 3.5 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 3 mm long, 3 mm wide, 4-veined; **petals** yellow, linear-oblong, subacute, 2.5 mm long, 0.5 mm wide, 1-veined, with minutely irregular margins; **lip** yellow-green, triangular-hastate, subacute, 2 mm long, 2 mm wide, the margins minutely undulate, the basal angles rounded, disc shallowly concave above the middle, convex at the base with a glenion, the base subtruncate, hinged to the column-foot; **column** stout, terete, 1 mm long, 1 mm wide, with a foot 1.5 mm long, with the anther, rostellum and stigma apical.

GUATEMALA: Volcán Zunil, alt. 7,900 ft., 4 Aug. 1934, *A.F. Skutch 942A* (Holotype of *P. pansamalae* var. *triangulabia*: AMES; Isotype: NY).
MEXICO: without locality, collected and cultivated by *Ray McCullough 1863* (SEL), C. Luer illustr. 247.

Native to Guatemala and adjacent Mexico, this species with a small, yellow flower at the base of a small, ovate leaf is not remarkable except for the lip and its position. The lip is triangular and held outward a significant distance below the column by a foot longer than the shaft of the column. The lip of *Acronia pansamalae* is broadly ovate and held against the undersurface of the column.

Acronia corysta (Luer) Luer, comb. nov.

Ety.: From the Latin *korystes*, "helmeted," referring to the deeply concave dorsal sepal.
Bas.: *Pleurothallis corysta* Luer, Selbyana 2: 384, 1978.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender to relatively stout, suberect to horizontal, 15-18 cm long, with a close, tubular sheath on the lower third and another 1-2 sheaths at the base. **Leaf** suberect to spreading, thickly coriaceous, oblong-ovate, obtuse, shortly acuminate, 12-18 cm long, 5-6 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 15 mm long; peduncles 2-4 mm long, concealed within the spathe; floral bracts thin, tubular, 5 mm long; pedicels 10 mm long; ovary 6 mm long; **sepals** red-brown, carinate, the dorsal sepal broadly ovate, subacute, deeply concave, 24 mm long, 15 mm wide unexpanded, 9- to 11-veined, the lateral sepals connate into a narrowly ovate, narrowly obtuse lamina with the sides revolute, microscopically ciliate-pubescent, 21 mm long, 8 mm wide expanded, 4-veined; **petals** decurved, falcate-oblong, subacute, smooth, glabrous, 12 mm long, 3.5 mm wide, 1-veined; **lip** erect, subovate, 6.5 mm long, 5 mm wide above the middle, smooth, entire, the sides revolute above the middle, the apex narrowly obtuse with the end of the midvein beneath markedly swollen, the disc without an obvious glenion, the base broadly and deeply concave on the end to accommodate the bulbous column-foot; **column** stout, 2 mm long, 3 mm wide, the foot thick, bulbous, the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: near Chiriboga, between Quito and Santo Domingo, collected by Joe Brenner 128, cultivated at Puyo, 4 Aug. 1977, *C. Luer 1815* (Holotype: SEL).

This species is apparently rare in northwestern Ecuador where it has been collected but once. It is most similar to the equally large-flowered *Acronia grandiflora*, but from the latter this single collection is distinguished by a large leaf, glabrous sepals (except for a microscopic pubescence of the laterals), and smooth petals and lip. The lip is about half as large with the sides decurved above the middle.

Acronia crateriformis (C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin *crateriformis*, "formed like a crater," referring to the concave lip.
Bas.: *Pleurothallis crateriformis* C.Schweinf., Bot. Mus. Leafl. 15: 88, 1951.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, with a close, tubular sheath below the middle and 2-3 densely short-pubescent sheaths at the base, 6-14 cm long. **Leaf** horizontal to spreading, thickly coriaceous, cordate-ovate, acute, 5-9 cm long, 2.5-4 cm wide, the base deeply cordate, sessile. **Inflorescence** a fascicle of solitary, successive, resupinate flowers, from a reclining spathe 8-11 mm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts 5 mm long; pedicel 8-10 cm long; ovary thick, verrucose, 4 mm long; **sepals** purple-brown, fleshy, verrucose within, the dorsal sepal broadly ovate, obtuse to subacute, 8-9.5 mm long, 5-7 mm wide, 5-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 8.5-9.5 mm long, 5-8 mm wide, 6-veined, deeply concave centrally; **petals** fleshy, oblong, obtuse, 6.5-7.5 mm long, 1-1.5 mm wide, 1-veined, minutely verrucose, more or less pilose within above the base; **lip** thick, ovoid, obtuse, 3.5-4 mm long, 3-3.5 mm wide, deeply concave centrally with the thick margins flattened and cellular-glandular, the base with a pair of low, rounded calli, broadly adherent to the column-foot; **column** stout, 1.5 mm long, 1.5 mm broad, the anther and bilobed stigma apical, the foot obsolescent.

PERU: **Junín**: Tarma, Agua Dulce, alt. 2000 m, 17 Mar. 1948, *F. Woytkowski 35487* (Holotype: JEPS; Isotypes: AMES, MO).
ECUADOR: **Morona-Santiago**: near Sinai, cultivated at Ecuagenera, 5 July 2002, *A. Hirtz 8283* (MO). **Azuay**: near Gima, cultivated by Linder Suin, 6 Mar. 2001, *C. Luer 19773* (MO); near Cuenca, cultivated by Eduardo Sánchez, 6 Mar. 2001, *C. Luer 19787* (MO). **Zamora-Chinchipe**: Cajanuma Range south of Loja, alt. 2750 m, 21 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10739* (MO).

This species occurs in the mountains of southern Ecuador and northern Peru. It is distinguished from the other members of the section by the thickly coriaceous, deeply cordate leaves and a fleshy, darkly colored, gaping flower that sits upon the leaf. The sepals are verrucose within, and the thick, ovoid lip is deeply concave centrally with the margins flattened and cellular-glandular.

Acronia crossota (Luer & Dalström) Luer, comb. nov.

Ety.: From the Greek *krossotos*, "fringed," referring to the petals and lip.

Bas.: *Pleurothallis crossota* Luer & Dalström, Lindleyana 11: 156, 1996.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-55 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, acuminate, 6-15 cm long, 4-8.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single, brown flowers, subtended by a spathe 7-8 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts tubular, 5-6 mm long; pedicels 5 mm long; ovary 3-4 mm long; **sepals** glabrous, the dorsal sepal elliptical, obtuse, 6-7 mm long, 4.25-4.75 mm wide, 5-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 5-6 mm long, 6 mm wide, 6-veined; **petals** slightly decurved, oblong, acute, 4.5-5 mm long, 1 mm wide, 1-veined, with the margins long-ciliate-fringed; **lip** cordate-ovate, obtuse, 3.5-3.75 mm long, 3.25 mm wide, 5-veined, the margins ciliate, the disc featureless with a small glenion at the base, the base flat between rounded basal angles, shortly deflexed, hinged to the column-foot; **column** 1 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Imbabura**: Los Cedros Reserve, wet forest, alt. 1700 m, 21 Jan. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1720* (Holotype: MO), C. Luer illustr. 17836; Los Cedros Reserve, García Moreno, alt. 1850 m, 1 Mar. 1992, *S. Dalström & T. Höijer 1599* (MO), C. Luer illustr. 16308; western ridge of Los Cedros Reserve, alt. 1500 m, 23 Mar. 1996, *S. Dalström, S. Ingram & K. Ferrell-Ingram 2197* (MO). **Pichincha**: Palmitopamba north of Nanegal, alt. 1300 m, 23 Jan. 1974, *G. Harling & L. Andersson 11561* (GB); beyond Pululahua, below Niebli, alt. 1800 m, 15 Feb. 1978, *C. Luer, J. Luer & A. Hirtz 2592* (SEL); Mindo toward Puerto Quito, alt. 1600 m, *C. Luer, A. Hirtz & S. Dalström 7321* (MO).

Although very similar to the large number of variations currently treated in *Acronia cordata* with a large, cordate leaf, this species is distinguished by the medium-sized flower with a five-veined, dorsal sepal; long-ciliate-fringed petals; and a proportionately large, five-veined, ciliate, cordate-shaped lip. It is more than half as long as the synsepal.

Acronia crucifera (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *crucifer*, "cross-bearing," referring to the appearance of the flower.

Bas.: *Pleurothallis crucifera* Luer & Hirtz, Lindleyana 11: 157, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-10 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, thinly coriaceous, ovate, acute, 4-7 cm long, 2-3.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single, flat, light yellowish brown flowers, borne from a spathe 5-10 mm long at the base of the leaf; peduncles 2-4 mm long, concealed within the spathe; floral bracts tubular, 5-6 mm long; pedicels 6-8 mm long; ovary 2.5 mm long; **sepals** glabrous, the dorsal sepal ovate, acute, 8-11.5 mm long, 2.5-3.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 7-11 mm long, 3.5-4 mm wide, 4-veined; **petals** widely expanded, narrowly triangular, acute, entire, 6-9 mm long, 1.5 mm wide, 1-veined; **lip** light tan to light green, triangular, acute, 2.75-4 mm long, 1.75-2 mm wide, minutely denticulate, shallowly sulcate, minutely verrucose, the base subtruncate with a comparatively large glenion, flattened on the end, hinged to the column-foot; **column** stout, terete, 1 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: epiphytic in forest between Chiriboga and Santo Domingo along the old road, alt. 1200 m, 31 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9837* (Holotype: MO). **Carchi**: epiphytic in forest between Maldonado and Chical, alt. 1400 m, *C. Luer, J. Luer, A. Hirtz, X. Hirtz & J. del Hierro 15111* (MO); same area, alt. 1500 m, 15 Jan. 1992, *C. Luer, J. Luer, A. Jesup & A. Jesup 16025* (MO); above Maldonado, alt. 2450 m, 26 Feb 1992, *S. Dalström et al. 1577* (MO). **Imbabura**: epiphytic on road southeast of Lita, alt. 1200 m, 11 Jan. 1992, *C. Luer, J. Luer, A. & X. Hirtz, A. & P. Jesup, M. Evans & J. del Hierro 15553* (MO).

Vegetatively, this species from northwestern Ecuador is similar to many others: an ovate, acute, cordate, more or less horizontal leaf borne by a slender ramicaul. The flowers are of average size for the section, widely expanded and are borne above the base of the leaf. The three-veined dorsal sepal and synsepal are ovate, acute, and about equal in size. The entire and narrowly triangular petals stretch straight out to either side giving a cross-like appearance to the flower. The lip is triangular, acute, minutely verrucose, and with a comparatively large glenion.

Acronia culpameae Luer, nom. nov.

Ety.: From the Latin *culpa mea*, "my mistake," referring to the second use of the name *privigna*.

Syn.:*Pleurothallis privigna* Luer & Hirtz, Rev. Soc. Bol. Bot. 3: 59, 2001, non Luer, Lindleyana 14: 118, 1999.

Ety.: From the Latin *privigna*, "a step-daughter," alluding to *A. cardiostola* and its allies.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-12 cm long, with a close, tubular sheath above the base and another at the base. **Leaf** coriaceous, spreading, cordate-ovate, acute, slightly acuminate, 4.5-7 cm long, 2-3 cm wide, the base sessile, deeply cordate with the lobes ca. 1 cm deep. **Inflorescence** a fascicle of successive, single, red-purple flowers, borne from a reclining spathe, 10 mm long, 3 mm wide, at the base of the leaf, enclosing the peduncles, pedicels and floral bracts; peduncles 2-3 mm long; floral bracts tubular, 4 mm long; pedicels 5 mm long; ovary subverrucose, 3 mm long; **sepals** cellular-glandular within, glabrous externally, the dorsal sepal broadly ovate, obtuse, 6 mm long, 4.5 mm wide, 5(7-)veined, the lateral sepals connate into an ovate synsepal, subacute, 5.5 mm long, 3.25 mm wide, 4-veined; **petals** elliptical-ovate, acute, microscopically denticulate, cellular-glandular, 5 mm long, 2.25 mm wide, 3-veined; **lip** purple, glabrous, ovate, obtuse, 2.5 mm long, 2 mm wide, the disc with a well-defined depression in the center, the base truncate, hinged to the base of the column-foot; **column** stout, 1 mm long, 1.5 mm broad, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Morona-Santiago**: Cordillera del Cutucú, along the new road to Morona, alt. ca. 900 m, 10 Jan. 1989, *A. Hirtz, A. Andreetta & S. Ortega 4130* (Holotype: MO), C. Luer illustr. 16241; collected near Macas, cultivated in Macas by Santiago Arévalo, 1 Mar. 2001, *C. Luer 19571* (MO).

This species of southeastern Ecuador is related to *Acronia cardiostola*, but differs by a smaller habit; a flat, ovate-cordate leaf that is not decurved; a small, reclining spathe; and a smaller flower with large, ovate, acute petals; and a small, ovate lip that is concave centrally.

Acronia cutucuensis (Luer) Luer, comb. nov.

Ety.: Named for the Cordillera del Cutucú where the species was collected.

Bas.: *Pleurothallis cutucuensis* Luer, Selbyana 3: 284, 1977.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender erect, 10-22 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, slightly acuminate, 6-9.5 cm long, 3.5-6 cm wide, the base sessile, deeply cordate. **Inflorescence** a single flower, produced successively, borne on top of the leaf, subtended by a spathe 12-15 mm long, at the base of the leaf; peduncles 2-3 mm long, concealed within the spathe; floral bract tubular, 5-8 mm long; pedicel 10 mm long; ovary 5-6 mm long; **sepals** glabrous, the dorsal sepal wine red, elliptical-ovate, subacute, 13-14 mm long, 7-8 mm wide, 5-veined, the lateral sepals white, suffused with rose, connate into an elliptical-ovate, subacute to obtuse synsepal, 12-14 mm long, 7-9 mm wide, 6-veined; **petals** deep wine red, narrowly triangular, acute, attenuate, smooth, 6.5-7 mm long, 1-1.3 mm wide, 1-veined; **lip** white, suffused with purple, oblong, obtuse, 5.5-6 mm long, 3.5 mm wide, the margins microscopically cellular-denticulate, the disc flat, cellular-glandular, with a small glenion at the base, the base truncate, concave on the end, hinged to the column-foot; **column** red, stout, 1 mm long, 2 mm wide, the foot thick, short, with the anther, rostellum and stigma apical.

ECUADOR: **Morona-Santiago:** Cordillera del Cutucú, southeast of Longrono, alt. 1000 m, collected Jan. 1976, cultivated at SEL, 28 Apr. 1976, *M. Madison 3130* (Holotype: SEL).

Although similar in most respects to the *Acronia bivalvis*-complex, this species from the isolated Cordillera del Cutucú in eastern Ecuador is distinguished by the dark purple, five-veined dorsal sepal; a white synsepal suffused with rose; dark purple, smooth, narrowly acute petals; and an oblong, white lip suffused with rose.

Acronia cuzcoensis Luer, sp. nov. for *Pleurothallis juninensis* var. *subaequisepala*

Ety.: Named for the department of Cuzco where the species has been collected.

Syn.: *Pleurothallis juninensis* var. *subaequisepala* C.Schweinf., Bot. Mus. Leafl. 16: 52, 1953.

Ety.: From the Latin *subaequisepalus*, "with unequal sepals," referring to the flowers.

Plant large, epiphytic, caespitose; roots coarse. Ramicaul slender, erect, at least 23 cm long, with a close, tubular sheath below the middle. **Leaf** suberect, elliptical, acute, 9.5-10 cm long, 2.3-3 cm wide in the dried state, the base sessile, cuneate, very shallowly cordate. **Inflorescence** a single flower produced

successively from a reclining spathe ca. 1 cm long at the base of the leaf; peduncles ca. 1 mm long within the spathe; floral bracts thin, tubular, less than 10 mm long; pedicels ca. 10 mm long; fruit costate, 35 mm long, 8 mm wide; **sepals** glabrous, the dorsal sepal narrowly ovate, acute, 17 mm long, 5.5 mm wide, 3-veined, the synsepal narrowly triangular, acute, 16 mm long, 16 mm wide; **petals** linear-ovate, acute, microscopically denticulate, 5.5 mm long, 1 mm wide; **lip** oblong, broadly obtuse at the apex, 6.25 mm long, 3 mm wide, diffusely cellular-papillose, the base truncate with a small glenion, hinged to the thick column-foot; **column** morphology distorted by the maturing capsule.

PERU: **Cuzco**: Convencíon, Hda. Potrero, Sapon-Sachayoce, alt 2200 m, 5 Mar. 1947, *C. Vargas 2561* (Holotype: AMES), C. Luer illustr. 18953.

The holotype of this species, the only specimen known, is in an advanced stage of fructation, which precludes an illustration of an intact flower. The floral parts are as illustrated here. Vegetatively, the plant is large with the incomplete ramicaul of the specimen 23 cm long, and bearing a large, broad, elliptical leaf that is cuneate at the base and acute at the apex. The three-veined dorsal sepal and the synsepal are nearly equal in size and shape: narrowly ovate, 16-17 mm long and 5.5-6 mm wide. The petals are narrowly ovate, one millimeter wide. The lip is oblong, 6 mm wide.

The narrow sepals, about three times longer than wide, suggest an appearance similar to those species related to *Acronia microglossa*, but the broad, elliptical leaf that is cuneate at the base distinguishes it. The description provided by Schweinfurth in *Orchids of Peru* (p. 314, 1959) was probably drawn from other specimens.

Acronia cyanea (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *cyaneus*, "dark blue," referring to the color of the leaves.

Bas.: *Pleurothallis cyanea* Luer & R.Escobar, Orquideología 16: 157, 1984.

Syn.: *Zosterophyllanthos cyanea* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 15-20 cm long, with a loose, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** dark blue-green above, suffused with purple beneath, deflexed to spreading, rigidly coriaceous, ovate, acute, 18-20 cm long, 5.5-7.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of 3-7 simultaneous, single flowers, borne from a reclining spathe 1.5-2 cm long at the base of the leaf; peduncles 3-5 mm long, within the spathe; floral bracts thin, tubular, 5-10 mm long; pedicels 7-15 mm long; ovary 6 mm long, cellular-verrucose; **sepals** rigidly fleshy-coriaceous, rugose and diffusely verrucose within, the dorsal sepal yellow, purple externally, broadly elliptical, obtuse, 15 mm long, 10 mm wide, 5-veined, the lateral sepals connate into a concave, broadly ovate, obtuse synsepal, 15 mm long, 13 mm wide; **petals** yellow, ovate, oblique, acute, verruculose, 10 mm long, 4.5 mm wide; **lip** yellow-white, thick, transversely ovate, 4 mm long, 5 mm wide, the rounded apex apiculate, the disc with a pair of low, rounded calli above the base, one on either side of a glenion, the base broadly cordate with rounded basal lobes, flattened on the end, hinged to the thick column-foot; **column** stout, 1 mm long, 2 mm broad, the foot thick, 2 mm long, with the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: without locality, obtained from A. Mejia, cultivated at Colomborquídeas, 20 Nov. 1981, *C. Luer 6730* (Holotype: SEL).

This species is closely allied to *Acronia calceolaris*. The former is distinguished by large, deflexed, blue-green leaves as long as their ramicauls. A cluster of fleshy-rigid flowers are produced from a reclining spathe at the base of the leaf. The broadly ovate dorsal sepal is rugose-verrucose within, and the synsepal is concave. The petals are verruculose and narrowly triangular from a broad base. The lip is thick and transversely ovate.

Acronia deflexa (Luer) Luer, comb. nov.

Ety.: From the Latin *deflexus*, "deflexed," referring to the sides of the lip.

Bas.: *Pleurothallis deflexa* Luer, Selbyana 1: 178, 1975.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender to relatively stout, erect, 10-45 cm long, with a close, tubular sheath on the lower third and 2-3 other sheaths at the base. **Leaf** erect to suberect, coriaceous, ovate to narrowly ovate, acute, 7-14 cm long, 2-

4.5 cm wide, the base sessile, cordate to deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 10-15 mm long; peduncles 2-4 mm long, concealed within the sheath; floral bracts thin, tubular, 5-9 mm long; pedicels 5-8 mm long, also concealed within the spathe; ovary 4-5 mm long; flowers yellow, orange, red, purple or brown, variously suffused along the veins; **sepals** microscopically ciliate-pubescent, the dorsal sepal ovate to broadly ovate, acute to obtuse, 9-15 mm long, 4-7 mm wide, 3-veined, the lateral sepals connate into an ovate, acute to subacute lamina, 9-13 mm long, 6-7 mm wide, 4-veined; **petals** decurved, oblong-falcate, subacute, denticulate-fimbriate, more or less minutely cellular-glandular, 6-8 mm long, 1-2 mm wide, 1-veined; **lip** erect, subovate, 4-5 mm long, 3-4 mm wide above the base, minutely verrucose to cellular-glandular, the margins denticulate, the sides revolute above the middle, but not forming a tube, the obtuse apex curved up, the disc with a glenion above the base, the base broadly and deeply concave on the end to accommodate the bulbous column-foot; **column** stout, 1.5 mm long, 2 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

Representative collections:
ECUADOR: **Pichincha**: between Quito and Santo Domingo, alt. 2000 m, 10 March 1975, *C. Luer & R. Kent 225* (Holotype: SEL); same area, alt. 1800 m, 8 May 1968, *G. Harling, G. Storm & B. Ström 9217* (GB); southwest of Chiriboga, alt. 2200 m, 22 Mar. 1979, *B. Løjtnant & U. Molau 11293* (AAU, GB). **Loja**: west of Selva Alegre, alt. 3000 m, 19 Feb. 1993, *G. Harling & B. Stahl 26565* (GB, MO). **Bolívar**: above Balzapamba toward Guaranda, alt. 2000 m, 26 Mar. 1984, *C. Luer, A. Hirtz et al. 9730* (MO). **Chimborazo**: below Pallatanga, alt. 2250 m, 19 Mar. 1985, *C. Luer, J. Luer & A. Hirtz 10658* (MO). **Azuay**: Cruz Pamba, southwest of Cuenca, alt. 10,000 ft., 29 June 1945, *W.H. Camp E-3929* (AMES, NY); Km 67 south of Cuenca, in xerophytic scrub, alt. 3250 m, 4 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 4932, 4983* (AAU, S); El Chorro, above Molleturo, alt. 2900 m, 7 Mar. 1985, *G. Harling & L. Andersson 22860* (GB).
COLOMBIA: **Antioquia**: Jardín, La Cifuentes, alt. 2350 m, collected by M. Zapata, cultivated at Colomborquídeas, 29 Dec. 1992, *R. Escobar 5132* (MO). **Santander**: Virolín, El Teladro, alt. 2200 m, collected by E. Valencia, 1992, flowered at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5158* (MO), C. Luer illustr. 16619.
VENEZUELA: Without collection data, May 1967, *G.C.K. Dunsterville 74*.

Acronia deflexa is widely distributed and locally common in the Andes of Ecuador and Colombia. It is related to sympatric *A. grandiflora*, but the flowers of *A. deflexa* are much smaller: about half the dimensions, or the flower is about four times smaller. The dorsal sepal of *A. deflexa* is three-veined; the petals lie more or less parallel to the lip; and the sides of the lip are deflexed above the middle as the apex curves up.

Acronia dejavu (Luer & Hirtz) Luer, comb. nov.

Ety.: From the phrase "deja vu," an illusion suggesting something being seen for the first time as something having been seen in the past.

Bas.: *Pleurothallis dejavu* Luer & Hirtz, Lindleyana 3: 140, 1988.

Plant medium in size, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, terete, 4-8.5 cm long, with close, tubular sheaths above the base. **Leaf** spreading, coriaceous, ovate, 3.5-5.5 cm long, 2-3.5 cm wide, the apex acute, shortly acuminate, the base deeply cordate, sessile, the basal lobes up to 1 cm long. **Inflorescence** a fascicle of solitary, successive flowers borne from a suberect spathe 9-11 mm long, from the base of the leaf; peduncles 7-9 mm long; floral bract 3 mm long; pedicel 7-8 mm long; ovary 2 mm long; **sepals** and petals purple, the dorsal sepal narrowly ovate, acute, concave in the lower third, 11 mm long, 4 mm wide unexpanded, 3-veined, unicarinate, the lateral sepals connate into an ovate synsepal, 11 mm long, 5.5 mm wide, 4-veined, the apex concave and narrowly truncate with the connate apices of both lateral sepals, bicarinate; **petals** subfalcate-subsigmoid, acute, minutely fimbriate, 8 mm long, 2.75 mm wide, 3-veined; **lip** purple, triangular, acute, 2.5 mm long, 1.75 mm wide, the basal angles acute, the disc with an elevated callus with the glenion, the base subtruncate, reflexed, firmly hinged to the base of the column; column terete, 2 mm long, 1 mm wide, the anther and transverse, bilobed stigma apical, the foot rudimentary.

ECUADOR: **Imbabura**: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C.H. Dodson, D. Benzing & D. Bermudes 12363* (Holotype: MO).

The flowers of this single-flowered species of *Acronia* sect. *Macrophyllae-Fasciculatae* were noted to be very similar to those of some racemose species (i.e. *A. rowleei*) that were at that time treated in *Pleurothallis* subsection *Acroniae*, presaging their union into one genus (Luer, 1988).

Acronia depressa (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *depressus*, "pressed down, flat," referring to the flower pressed upon the leaf.

Bas.: *Pleurothallis depressa* Luer & R.Escobar, Orquideología 20: 50, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-14 cm long, with a slender, tubular sheath below the middle and 2-3 others at the base. **Leaf** spreading, coriaceous, broadly cordate, obtuse, shortly acuminate, 6-7.5 cm long including the basal lobes 1-1.5 cm deep, 3.5-4.5 cm wide, base sessile. **Inflorescence** a single flower produced successively from a reclining spathe 7-8 mm long at the base of the leaf, with the flower widely spread, appressed against the surface of the leaf; floral bract thin, 5 mm long; pedicel 5 mm long; ovary 2 mm long; **sepals** translucent pale yellow, glabrous, the dorsal sepal flat, ovate, acute, 13 mm long, 5.5 mm wide, 3-veined, the lateral sepals connate into a flat, ovate, acute synsepal, 11 mm long, 7.5 mm wide, 6-veined; **petals** yellow, narrowly ovate-subfalcate, acute, 7.5 mm long, 2 mm wide, 1-veined; **lip** yellow, ovate, obtuse, thick, 3 mm long, 2 mm wide, the disc densely short-pubescent, with a small glenion, the base shortly deflexed, connected to the obsolescent column-foot; **column** stout, semiterete, 1.5 mm long, 3.5 mm wide, the foot thick, obsolescent, the anther, rostellum and stigma apical.

COLOMBIA: **Chocó**: Carmen de Atrato, alt. ca. 1800 m, collected by E. Valencia, May 1983, cultivated at Colomborquídeas, 23 May 1995, *C. Luer 17569* (Holotype: MO).

Vegetatively, this species is similar to many of the species of this section with spreading, broadly cordate, shortly acuminate leaves. Most distinctive is the solitary, flat flower that is borne flat against the surface of the leaf. The sepals are translucent pale yellow, and the proportionately small, ovate lip is short-pubescent.

Acronia dewildei (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named in honor of Ahrend DeWilde of Pereira, Colombia, who collected and cultivated this species.

Bas.: *Pleurothallis dewildei* Luer & R.Escobar, Orquideología 21: 86, 1998.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 10-23 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, narrowly ovate, acuminate, acute, 10-15 cm long, 3-4.5 cm wide, the base sessile, with cordate lobes 1 cm deep. **Inflorescence** a fascicle of successive, single flowers, from a spathe ca. 12 mm long; peduncles ca. 5 mm long, concealed within the sheath; floral bracts tubular, ca. 5 mm long; pedicels ca. 5 mm long; ovary 5 mm long; flowers purple; **sepals** cellular-pubescent externally, the dorsal sepal elliptical-ovate, subacute, 20 mm long, 11 mm wide, 7-veined, the lateral sepals connate into an ovate, subacute synsepal, 17 mm long, 12 mm wide, 10-veined; **petals** obliquely triangular-ovate, acute, glabrous, 11.5 mm long, 4 mm wide, 3-veined; **lip** broadly cordate-ovate, obtuse, microscopically pubescent externally, glabrous within, 6 mm long, 5.5 mm wide, deeply concave above the middle with involute margins, the base subtruncate with a small glenion, with a short, deflexed claw, hinged to the column-foot; **column** 1 mm long, 2.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Risaralda**: epiphytic in cloud forest along road to TV tower south of Pueblo Rico, collected Apr. 1993 by A. DeWilde, cultivated in Pereira, 15 May 1993, *C. Luer 16854* (Holotype: MO).

Vegetatively, this species appears similar to many other large species of this section. It is characterized by more or less horizontal, acuminate leaves. It is related to *Acronia cardiothallis* and *A. titan*, but the lip saccate above the middle with involute margins immediately distinguishes it.

Acronia diabolica (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *diabolicus*, "like a devil," in allusion to the dark red flower with a horned lip.

Bas.: *Pleurothallis diabolica* Luer & R.Escobar, Orquideología 14: 142, 1981.

Syn.: *Pleurothallis exserta* Luer & Hirtz, Lindleyana 3: 143, 1988.

Ety.: From the Latin *exsertus*, "exserted, protruding beyond surrounding organs," referring to the flower exserted beyond the spathe.

Syn.: *Zosterophyllanthos diabolicus* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a close, tubular sheath above the base, and 2-3 sheaths at the base, 15-40 cm long. **Leaf** deflexed, rigid,

coriaceous, narrowly ovate, 8-13 cm long, 1.2-2.5 cm wide, more or less curved upward above the middle, the apex acute, the base sessile, deeply cordate, sometimes conduplicate with the rounded basal lobes erect and touching. **Inflorescence** a fascicle of solitary, successive flowers borne from an erect, conduplicate spathe 10-20 mm long, 7-9 mm broad, at the base of the leaf; peduncles slender, 10-12 mm long, confined within the spathe; floral bract 6 mm long; pedicel 10-12 mm long; ovary 8-10 mm long; sepals and petals dark red to purple-brown with darker veins, the dorsal sepal broadly ovate, obtuse, more or less convex, 5-8.5 mm long, 5-6.5 mm wide, 5-veined, the lateral sepals connate into a broadly ovate to obovate, obtuse, more or less convex, minutely bifid synsepal, 5-8 mm long, 5-6.5 mm wide, 4-veined; **petals** more or less revolute above the middle, elliptical-obovate, acute, 4-6 mm long, 2-2.5 mm wide, 1-veined, minutely pubescent toward the apex, the margins minutely ciliate-denticulate; **lip** dark red-purple or purple-brown, ovate-triangular, broadly obtuse, cellular-glandular, 3-4.5 mm long, 3-4 mm wide across the base, the basal lobes acute, erect, incurved, to either side of the column, the disc lightly cleft toward the apex, and with a narrow, lightly channeled callus or glenion above the base, the base subtruncate, flattened on the end, firmly hinged to the column-foot; **column** dark purple, stout, 0.5 mm long, 1 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

COLOMBIA: **Antioquia**: epiphytic in cloud forest near Frontino, Nov. 1975, collected by J. Kuhn and R. Escobar, cultivated at J & L Orchids, Easton, CT., 11 Nov. 1977, *C. Luer 2161* (Holotype: SEL); Urrao, Parqué Naturel las Orquídeas, alt. 1500 m, *D. Cardenas & E. Alvarez 3245* (JAUM, MO).
ECUADOR: **Esmeraldas**: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C.H. Dodson, D. Benzing & D. Bermudas 12355* (MO, type of *A. exserta*); same area, 18 Jan. 1987. *C. Luer et al., 12395, 12401* (MO); same area, alt. 800 m, 15 June 1988, *A. Hirtz 3601* (K, MO).

This species occurs from the Western Cordillera of Colombia into northwestern Ecuador. Vegetatively it is similar to *Acronia cardiostola* and relatives with the acutely deflexed, narrowly and deeply cordate leaves. The rounded basal lobes are sometimes inflexed, meeting above the conspicuous, erect, sleeve-like spathe. The flower is smaller than the average *A. cardiostola*, and it is exserted well beyond the end of the spathe by a proportionately longer peduncle, pedicel and ovary. The lip is most distinctive with the basal angles acute and erect like a pair of horns.

Acronia diazii Luer & Endara, sp. nov.

Ety.: Named for C. Diaz, co-collector of this species.

Species haec *Acronia lilijae* Foldats affinis, sed sepalo dorsali orbiculari, petalis angustioribus, labello triangulari marginibus minute papillosis cum angulis subacutis, ad centrum zona magna definita differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-30 cm long, with a close, tubular sheath near the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, acuminate, 7-10 cm long, 3-4 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, borne from a reclining spathe 8-10 mm long, 4-5 mm wide, peduncles abbreviated deep within the spathe, floral bracts tubular, 6-8 mm long; pedicels 6-8 mm long, also contained within the spathe; ovary 2.5-3 mm long; flowers yellow-green; **sepals** expanded, the dorsal sepal suborbicular, 10 mm long, 10 mm wide, 5-veined, the lateral sepals connate into an oblong-ovate, obtuse, minutely papillose synsepal, 10 mm long, 5 mm wide, 4(6-)veined; **petals** obliquely obovate, acuminate toward the tip, 8 mm long, 2 mm wide, 1-veined, microscopically denticulate; **lip** thick, ovate-triangular, obtuse, 3.5 mm long, 2.25 mm wide across the base, the apex and protruding basal angles subacute with the thickened margin minutely papillose, the disc with a well-defined circular zone filling the center of the lip, the base concave, hinged to the column-foot; **column** stout, terete, 1 mm long, 2 mm broad, the foot thick, with the anther, rostellum and stigma apical.

PERU: **Cajamarca**: Jaén, Sallique, Localidad de Lanchal, La Cocha, alt. 2960-3050 m, 20 June 1998, *C. Diaz, J. Campos & E. Tineo 9647* (Holotype: MO).

This species, known only from Peru, is related to *Acronia lilijae* which is found relatively frequently from Venezuela into Ecuador. From the latter, it is distinguished by a larger dorsal sepal that is suborbicular, narrower petals, and a triangular lip with acute apical and basal angles. The margins of the lip are minutely papillose with coalescing papillae toward the apex. The center of the lip is occupied by a well-defined elliptical zone that is probably analagous to a large glenion.

Acronia dibolia (Luer) Luer, comb. nov.

Ety.: From the Greek *dibolia*, "a double-edged lance," referring to the habit.

Bas.: *Pleurothallis dibolia* Luer, Selbyana 1: 238, 1975.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-34 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, with the sides more or less revolute, 7-13 cm long, 1.5-3.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 5-7 mm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts thin, tubular, 2-3 mm long; pedicels 3-4 mm long; ovary 3-4 mm long; **sepals** yellow, glabrous, the dorsal sepal ovate, acute, 3.5-4 mm long, 2-2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute lamina, 3-3.5 mm long, 3 mm wide, 4-veined; **petals** yellow, narrowly ovate, acute, obscurely serrulate, 1.75 mm long, 0.5 mm wide, 1-veined; **lip** brown, broadly ovate-cordate, obtuse, 1.5 mm long, 1.25 mm wide, the disc with a pair of low, obtuse, basal calli flanking a glenion at the base, the base broadly concave on the end to accommodate the bulbous column-foot; **column** stout, 1 mm long, 1 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: epiphytic in coffee trees, east of Santo Domingo, alt. 800 m, 28 Feb. 1975, *C. Luer & R. Kent 269* (Holotype: SEL); epiphytic in orange trees near Santo Domingo, alt. 625 m, 6 Feb. 1963, *C. Dodson & L. Thien 2240* (SEL); same area, 15 June 1967, *C. Dodson, N. Williams & Adams 3709* (SEL); Palmitopamba, west of Nanegal, alt. 1300 m, 23 Jan. 1974, *G. Harling & L. Andersson 11531* (AMES, GB); Río Baba by Santo Domingo, alt. 500 m, 2 July 1971, *B. MacBryde 527* (AMES); between Chone and Santo Domingo, alt. 550 m, 10 June 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 7036* (AAU); Centenela, Montañas de Ila, alt. 550-650 m, 10 July 1979, *B. Løjtnant & U. Molau 15853* (AAU, GB). **Cotopaxi**: in citrus grove between Quevedo and Latacunga, alt. 700 m, 5 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 2952, 2958, 2949* (AAU, AMES); guava trees east of Quevedo, alt. 500 m, 5 Mar. 1975, *C. Luer & R. Kent 339* (SEL).

Frequent in cultivated citrus, coffee and guava trees, this species occurs on the western slopes of the Andes of central Ecuador at a moderately low altitude. It is distinguished by the tall, slender ramicauls and erect, narrowly ovate, cordate leaves. The dorsal sepal, synsepal and petals are yellow, acute and glabrous. The lip is broadly cordate with a pair of basal calli flanking the glenion.

Acronia dilemma (Luer) Luer, comb. nov.

Ety.: From the Greek *dilemma*, "a dilemma," in allusion to the "two-horned" leaf.

Bas.: *Pleurothallis dilemma* Luer, Rev. Soc. Bol. Bot. 3: 45, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a close, tubular sheath on the lower half, and 2 sheaths at the base, 5-15 cm long. **Leaf** deflexed, thickly rigid, semiterete, narrowly ovate to sigmoid-ovate, densely short-pubescent, 5-11 cm long, 1-1.2 cm wide, broadly and shallowly channeled to near the apex, the apex acute, the base sessile, deeply forked, the basal lobes semiterete, approximate, erect, pointing upward. **Inflorescence** a successive, single flower borne from a reclining spathe 1 cm long, at the base of the leaf; peduncles subnil, confined within the spathe; floral bract ca. 7 mm long; pedicel 7-8 mm long, also enclosed within the spathe; ovary 4-5 mm long; sepals and petals dark red, diffusely short-pubescent, the dorsal sepal suborbicular, broadly obtuse, 12 mm long, 12 mm wide, 7-veined, the lateral sepals connate into a broadly ovate, obtuse, minutely bifid synsepal, 11 mm long, 10.5 mm wide, 10-veined; **petals** elliptical-obovate, acute, ciliate, pubescent, 8 mm long, 3 mm wide, 3-veined; **lip** dark red-purple, ovate-cordate, broadly obtuse, densely papillose, 6 mm long, 5.5 mm wide, the basal lobes obtuse, to either side of the column, the disc concave centrally with a glenion, the base shallowly cordate, flattened on the end, attached to the column-foot; **column** stout, 1 mm long, 2.5 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, Nambija, alt. 1800-2000 m, collected by J. Portilla, cultivated at Gualaceo, Apr. 2000, *J. Portilla 254* (Holotype: MO), C. Luer illustr. 19410.

Although the flower is not remarkably distinct from the average flowers of the section *Acronia*, it is unique vegetatively among all the pleurothallids . In common with other species of this section, juvenile plants bear narrowly elliptical-linear leaves with narrowly cuneate bases continuous with slender, suberect ramicauls. Mature leaves are acutely deflexed from the erect ramicaul. The blades of the minnuutely pubescent leaves are remarkably thick and rigid, narrowly sigmoid in shape. The narrowly conical basal lobes stand together and erect, like a pair of horns, above the flower that reclines upon the leaf.

Acronia discoidea (Lindl.) Luer, comb. nov.

Ety.: From the Latin *discoideus*, "discoid," probably referring to the "sanguine spot" on the lip.
Bas.: *Pleurothallis discoidea* Lindl., Edwards's Bot. Reg. 21: sub t. 1797, 1835.

Syn.: *Humboldtia discoidea* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Pleurothallis morrisii* Fawc. & Rendle, J. Bot. 67: 3, 1909.
Ety.: Named in honor of Sir Daniel Morris, director of the Public Gardens in Jamaica, who collected this species.

Syn.: *Pleurothallis leptopetala* Cogn. ex Urban, Symbol. Antill. 6: 693, 1910.
Ety.: From the Greek *leptopetalon*, "a thin petal," referring to the petals.

Syn.: *Pleurothallis scleropus* Schltr., Repert. Spec. Nov. Regni Veg. 28: 53, 1929.
Ety.: From the Greek *scleropus*, "hard footed," referring to the rhizome and ramicaul.

Syn.: *Pleurothallis juninensis* var. *angustifolia* C.Schweinf., Bot. Mus. Leafl. 16: 52, 1951.
Ety.: From the Latin *angustifolius*, "with narrow leaves," referring to the leaves.

Syn.: *Pleurothallis mariae* Bock, Die Orchidee 36: 126, 1985.
Ety.: Named in honor of Sra. Maria Cohrs, who cultivated this species in Colombia.

Syn.: *Pleurothallis sugdenii* Luer, Orquideología 20: 229, 1996.
Ety.: Named for Andrew Sugden who collected this species.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-12 cm long, rarely to 19 cm, with a close, tubular sheath on the lower half and 2 other sheaths at the base. **Leaf** erect, coriaceous, elliptical-oblong to narrowly elliptical-oblong or fusiform, acute, 3-12 cm long, 0.5-2.5 cm wide, the base cuneate to acuminate, sessile. **Inflorescence** a single, occasionally 2-3 simultaneous, successive flowers, subtended by a spathe 3-5 mm long, at the base of the leaf; peduncles 2-4 mm long within the spathe; floral bract tubular, 3-5 mm long; pedicel 4-7 mm long; ovary 2-3 mm long; **sepals** yellow-green to suffused with red, glabrous, the dorsal sepal ovate, subacute to obtuse, 5-8 mm long, 2-3 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 5-7 mm long, 2.5-3.75 mm wide, 4-veined; **petals** yellow-green, yellow, red to purple, narrowly linear-triangular to narrowly oblong, acute, 3-4 mm long, 0.5-1 mm wide, 1-veined; **lip** yellow-green to orange, oblong, obtuse, sometimes with minutely irregular margins, 2.75-3.5 mm long, 1.5-2 mm wide, the disc broadly and shallowly concave between a longitudinal pair of low, intramural calli, with a large glenion filling much of the basal half, the base subcordate, concave on the end, hinged to the column-foot; **column** semiterete, 1-2 mm long, 1-2 mm wide, the foot obsolescent, with the anther, often red, rostellum and stigma apical.

Representative collections:
TRINIDAD: without collection data (Holotype: K); Oct. 1845, *Dr. Bradford s.n.* (BM); flowered in cultivation at Kew, 16 Aug. 1880, collected by *Prestoe s.n.* (K); July 1881, *A. Fendler 791* (K); Conupia, 23 Mar. 1892, *D.W. Alexander s.n.* (AMES); Arima, on cocoa trees, 1 July 1908, *W.E. Broadway s.n.* (isotypes of *P. leptopetala*: AMES, K, NY); Cocoa plantation, base of Mt. Tamana, 18 Apr. 1920, *N.L. Britton, E.G. Britton & T.E. Hazen 1965* (AMES, NY); Blanchisseuse Road, 1 May 1925, *W.E. Broadway 5671* (BM, K); Heights of Aripo, 10 Jan. 1922, *W.E. Broadway 9882* (AMES, K); Las Lapas Road, 5 Feb. 1926, *W.E. Broadway 5930* (MO); Morne Bleu, alt. 1,500 ft., 31 Oct. 1937, *N. Y. Sandwith 1940* (K); St. George, alt. 130 m, 22 July 1976, *Barnard, Jones & Crane 214* (K).
TOBAGO: Menna near Caledonia: 21 Apr. 1913, *W.E. Broadway 4661* (AMES, BM); Mount St. George, Castara Trace, alt. 450 m, 10 Apr. 1959, *R.S. Cowan 1508* (AMES)
JAMAICA: without locality, *D. Morris 28* (holotype of *P. morrisii*: BM, isotype: IJ).
HONDURAS: Lempira, Don Thomas campsite, Celeque National Park, 11 Nov. 1991, *T. Hawkins 58* (MO), C. Luer illustr. 20811.
VENEZUELA: **Nueva Esparta**: Isla de Margarita, San Juan Moountains, alt. 750 m, 11 July 1903, *J.R. Johnston 234* (AMES), C. Luer illustr. 18851. **Miranda**: Parqué Nacional de Guatopo, Río Santa Cruz between Santa Teresa and Altagracia de Orituco, alt. 520 m, 23 Nov. 1961, *J.A. Steyermark 90002* (AMES, VEN). **Sucre**: Peninsula de Paria, Cerro Patao, 19 July 1962, *J.A. Steyermark 91151* (AMES, VEN). **Dist. Fed.**: near Caracas, collected by D. Dod, cultivated 4 May 1986, *C. Luer 12163* (MO). **Monagas** Cerro de la Cueva de Doña Anita, alt. 1300 m, 7 Apr. 1945, *J.A. Steyermark 61932* (AMES). **Anzoátegui**: Río Cangrejo, northeast of Bergantín, alt. 500 m, 24 Feb. 1945, *J.A. Steyermark 61176* (AMES).
SURINAME: Tafelberg, alt. 625 m, 26 Aug. 1944, *B. Maguire 24525* (AMES, K, NY); Wilhelmina Mts. alt. 800 m, 15 July 1981, *R. Determann 81-2170* (SEL), C. Luer illustr. 6823.
BRAZIL: **Amazonia**: Terr. Roraima, Serra da Lua, alt. 1200 m, 24 Jan. 1969, *G. T. Prance, J.R. Steward, J.F. Ramos & L.G. Farias 9454* (AMES, HB, INPA, K. NY, S, US). **Amapa**: Riviere Haut Jari, alt. 500 m, 23 Aug. 1993, *J.J. De Granville, P. Acevedo, A. Boyer & L. Hollenberg 12429* (BBS, CAY, US), C. Luer illustr. 18678.

COLOMBIA: **Chocó**: Quibdó, alt. 300 m, collected by A. DeWilde, cultivated near Pereira, 10 May 1993, *C. Luer 16737* (MO); Vigia del Fuerte, alt. 50 m, Aug. 1979, *K.-H. & I. Bock, s.n* (holotype of *P. mariae*: Herb. BOCK). **Antioquia**: Dabeiba, Alto de Aguila, alt. 1100 m, collected by A. Alvarez, cultivated at Colomborquídeas, 9 Apr. 1988, *C. Luer 13093* (MO). **Intendencia de la Guajira**: Oxford Research Expedition, Serrania de Macuira, Cerro Huararech, alt. 650 m, 5 Aug. 1975, *A. Sugden 34* (holotype of *A. sugdenii*: K), C. Luer illustr. 17286.
ECUADOR: **Tungurahua**: along Río Topo, alt. 1680 m, 27 Feb. 2001, *C. Luer, J. Luer & A. Hirtz 19539* (MO). **Morona-Santiago**: Misión Bomboiza, alt. ca. 800 m, 23 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 4196* (AAU); Valle de Calagrás, alt. 1500 m, 17 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13415* (MO, QCNE); Cordillera del Condor, east of Guisme, alt. 1500 m, 18 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11917* (MO). **Zamora-Chinchipe**: along Río Jamboe, alt. 1250 m, 22 Jan. 1992, *C. Luer, J. Luer, A. & P. Jesup & A. Hirtz 16116* (MO); above Valladolid, alt. 2000 m, 18 Mar. 1984, *C. Luer, S. Dalström, T. Höijer & J. Kuijt 9607* (MO).
PERU: **Huánuco**: Yanano, alt. ca. 1800 m, 13-16 May 1923, *J.F. Macbride 3847* (holotype of *P. juninensis* var. *angustifolia*: F; isotype: AMES); Oxapampa, alt. 1800 m, 31 Jan. 1979, *C. Luer & J. Luer 3828* (SEL); Leoncio Prado, San Juán de Cochero, alt. 1500 m, 28 July 1992, collected by E. Jara, *D. Bennett 5675* (MO).
BOLIVIA: **La Paz**: Larecaja, Hda. Simaco, above trail to Tipuani, alt. 1400 m, Feb. 1920, *O. Buchtien 5041* (holotype of *P. scleropus* destroyed at B; lectotype US; isolectotype: AMES); Murillo, Valley of Río Zongo, alt. 1400-1600 m, 22 Apr. 1982, *J.C. Solomon 7501* (MO); above Tipuani, Alto Llipi, collected by A. Hirtz et al., 30 Aug. 1991, *C. Luer 15389B* (MO). **Cochabamba**: Río Evispas, flowered in cultivation, *C. Luer 5636* (SEL). **Santa Cruz**: south of Yapacaní, alt. 650 m, Sept. 1991, *C. Luer, J. Luer, L. Moreno & D. Ric 15405* (MO).

Acronia discoidea was first described by Lindley from a collection from Trinidad, but no other details are known. Only a crude sketch remains from Hooker's herbarium. On the same sheet, a Cuban collection by Wright, presumably *Acianthera odontotepala* Rchb.f., has been mounted. *Acronia discoidea* was described again from Trinidad as *P. leptopetala* by Cogniaux three quarters of a century later. It is treated here as a frequent species that is vegetatively and florally variable in its wide distribution at relatively low altitudes from the Antilles and Central America, and through much of South America. It is the only member of the genus *Acronia* known from the Antilles (Jamaica). The largest vegetative variations are found in coastal Venezuela and the off-shore islands, as well as in Honduras.

The size and shape of the leaf vary from elliptical to narrowly elliptical-linear. The leaves are frequently held horizontally, with the sessile base cuneate, not rounded. The single flower is borne on the dorsum at the base of the leaf. The color is often yellow-green, with an orange lip. The dorsal sepal and synsepal are ovate; the petals are thin and entire; and the lip is oblong and obtuse, shallowly channeled medially with a large glenion. The center of the lip was described as red in the original collection, as it is often seen today.

Acronia dorotheae (Luer) Luer, comb. nov.

Ety.: Named for Dorothy Lankester, daughter of Charles Lankester, in whose collection this species was cultivated.

Bas.: *Pleurothallis dorotheae* Luer, Phytologia 46: 365, 1980.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect or horizontal, 1.5-7 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect or horizontal, rigid, thickly coriaceous, elliptical, subacute, 2-4.5 cm long, 1-1.5 cm wide, the base cuneate, sessile. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, subtended by a spathe 4-8 mm long; peduncles 3-4 mm long, concealed within the sheath; floral bracts thin, tubular, 3-4 mm long; pedicels 3-4 mm long; ovary 2.5-4 mm long; **sepals** purple, yellow or light green, more or less suffused or speckled with purple, fleshy, glabrous, the middle sepal broadly ovate to suborbicular, obtuse, 4-5.75 mm long, 4-5 mm wide, 3-veined, the lateral sepals connate into a broadly ovoid, obtuse, concave synsepal, 4-5 mm long, 5-5.5 mm wide, 4-veined; **petals** purple or yellow, oblong, incurved, shallowly concave, acute, 2.5-3 mm long, 1 mm wide, 1-veined, with the vein thickened externally and at the apex; **lip** purple or yellow, thick, ovate-cordate, obtuse, shortly acuminate, 2.5-2.75 mm long, 2.5-3 mm wide, with the basal angles erect, acute, flanking the column, the disc with a pair of small basal

calli at the base, with a suborbicular cavity above the base between calli descending from the basal pair, the base truncate, hinged on the end to the base of the column; **column** stout, 1 mm long, 1.5 mm wide, the foot obsolescent, the anther, rostellum and transverse stigma apical.

COSTA RICA: Without collection data, cultivated by Dorothy Lankester in San José, Costa Rica, 28 Feb. 1980, *C. Luer 5204* (Holotype: SEL). **Puntarenas**: near the Monteverde Reserve, alt. 1400 m, 24 June 1981, *C. Luer & A. Luer 6411* (SEL); same area, alt. 1500 m, 22 Mar. 1995. *C. Luer. J. Luer, A. Atwood & G. Barbosa 17456, 17457, 17475* (MO).

This species is frequent in the region surrounding the Monteverde Reserve where the flowers occur in colors from yellow to purple. Dense clusters of slender ramicauls bear the thick, rigid, elliptical, sessile leaves more or less horizontally with the non-resupinate flower borne on top. The concave synsepal is uppermost with the narrow, longitudinally concave, subcarinate petals curved to both sides of the lip. The lip is thickly cordate-ovate, shortly acuminate, with erect, triangular basal lobes that flank the base of the lip. The callus has a pair of nodules along the basal margin under the column, and with a cavity between downward extensions of the calli.

Acronia dorothaea is most closely allied to *A. excavata* which is distinguished by the sepals papillose within, and a long-apiculate lip that is broadly and deeply concave with a pair of retrorse, hornlike basal lobules.

Acronia dracuncula Luer & Hirtz, sp. nov.

Ety.: From the Latin *dracunculus*, "a little dragon," referring to the gaping mouth with a hairy tongue.

Species haec *A. cordatae* (Ruiz & Pav.) Luer affinis, sed habitu floribusque majore, ovario subverrucoso, petalis oblongis ciliatis pubescentibus et labello obovato ciliato pubescentique differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, to more than 35 cm long, with a tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, broadly ovate, obtuse, acuminate, 16-18 cm long, 10-11 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, successive flower, borne on top of the leaf, subtended by a broad, reclining spathe 12-17 mm long; peduncles 2-3 mm long, concealed within the spathe; floral bracts tubular, 7-8 mm long; pedicels 10 mm long; ovary 7 mm long, subverrucose; flower gaping, dark purple, **sepals** fleshy, glabrous, the dorsal sepal elliptical, subacute to obtuse, 12 mm long, 7 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 11 mm long, 10 mm wide, 6-veined; **petals** oblong, subacute, flanking the lip, pubescent, ciliate, 7 mm long, 1.5 mm wide, 1-veined; **lip** thick, obovate, 4 mm long, 3.25 mm wide, the apex broadly rounded without a subconical callus beneath, the margins ciliate, the disc slightly convex, pubescent, the base broadly truncate, with an obscure glenion, flattened on the end, hinged to the column-foot; **column** stout, terete, 2 mm long, 2.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

EDUADOR: **Cotopaxi**: west of El Corazón, alt. 1200 m, 18 Feb. 1979, *C. Luer, J. Luer & A. Hirtz 4009* (Holotype: SEL).

This gigantic relative of the common, variable *Acronia cordata* found in west-central Ecuador is distinguished by the considerably larger leaves, and considerably larger flowers borne by a considerably larger spathe. The ovary is subverrucose, the sepals are dark purple and glabrous, and the petals and obovate lip are ciliate and pubescent.

Acronia dubbeldamii (Luer) Luer, comb. nov.

Ety.: Named for Piet Dubbeldam of Heerjansdam, Holland, who cultivates this species.

Bas.: *Pleurothallis dubbeldamii* Luer, Orquideologia 22: 260, 2003.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-11 cm long, with a close, tubular sheath below the middle and another at the base. **Leaf** suberect, coriaceous, ovate, acute, 4 cm long, 2.5 cm wide, the base cordate, sessile. **Inflorescence** a single, successive, light yellow flower; peduncles ca. 1 mm long within the 1 cm long, reclining spathe; floral bract 4.5 mm long; pedicel 9 mm long; ovary 3 mm long; **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute, concave centrally, 6.25 mm long, 3.25 mm wide, 3-veined, the lateral sepals completely connate into an ovate, concave, obtuse synsepal, 5.5 mm long, 4 mm wide, 4-veined; **petals** curved, oblong, acute, 5 mm long, 1.25 mm

wide, with the margins revolute; **lip** thin, ovate, subacute, 3.5 mm long, 2 mm wide, the disc featureless except for a glenion at the base, the base shallowly concave, hinged to the base of the column-foot; **column** stout, dorsally compressed, semiterete, 1 mm long, 1.25 mm wide, the anther and bilobed stigma apical.

WITHOUT COLLECTION DATA: cultivated in Heerjansdam, Holland, 2 Aug. 1998, by *P. Dubbeldam 95257* (Holotype: MO), C. Luer illustr. 18903.

This little species was purchased without collection data by Piet Dubbeldam and cultivated by him in the Netherlands. It is superficially similar to the ubiquitous *Acronia phyllocardioides*, but is distinguished from the numerous variations by a narrowly larger spathe and a larger flower. The sepals are concave centrally above a convex portion at the base. The petals are larger and broader, curved slightly, and with revolute margins. The lip is thin and flat.

Acronia ensata (Luer) Luer, comb. nov.

Ety.: From the Latin *ensatus*, "sword-like," referring to the leaves.
Bas.: *Pleurothallis ensata* Luer, Selbyana 1: 240, 1975.

Syn.: *Zosterophyllanthos ensatus* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 118, 2001.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-22 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, narrowly elliptical, acute, 5-11 cm long, 0.5-1.5 cm wide, the base sessile, cuneate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 5-8 mm long; peduncles 1-2 mm long, concealed within the spathe; floral bracts thin, tubular, 3 mm long; pedicels 5-8 mm long; ovary 3-4 mm long; **sepals** yellow-brown, glabrous, the dorsal sepal elliptical-ovate, narrowly obtuse, 7-9 mm long, 2.5-3.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 6-8 mm long, 4.5-5 mm wide, 4-veined; **petals** red-brown, thick, triangular, acute, 2-2.5 mm long, 0.5-1 mm wide, 1-veined; **lip** yellow-green, thick, elliptical-ovate, rounded at the apex, 2.5-3 mm long, 2 mm wide, the disc slightly convex, with an indistinct glenion and a pair of low calli at the base, the base subtruncate, shallowly concave on the end to accommodate the column-foot; **column** stout, 1 mm long, 1 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: epiphytic east of Santo Domingo, alt. 1000 m, 15 Aug 1975, *C. Luer, G. Luer & S. Wilhelm 579* (Holotype: SEL); epiphytic in coffee trees, east of Santo Domingo, alt. 800 m, 28 Feb. 1975, *C. Luer & R. Kent 268* (SEL); Tandapi, alt. 1500 m, Spring 1983, *A. Hirtz 828* (SEL); without locality, *W. Jameson 99* (W).

Frequent in cultivated citrus, coffee and guava trees on the western slopes of the Andes of central Ecuador at a moderately low altitude, this species is distinguished by the tall, slender ramicauls and erect, narrowly elliptical leaves that are narrowly cuneate at the base. The dorsal sepal and synsepal are obtuse, and the petals are thickly triangular. The lip is oblong with the apex rounded.

Acronia epiglottis (Luer) Luer, comb. nov.

Ety.: From the Latin *epiglottis*, in allusion to the erect glenion of the labellum.
Bas.: *Pleurothallis epiglottis* Luer, Phytologia 46: 365, 1980.

Syn.: *Zosterophyllanthos epiglottis* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, ascending to erect, 7-15 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, suberect to spreading, coriaceous, oblong-ovate, acute, slightly acuminate, 6-10 cm long, 1.5-4 cm wide, the base sessile, cordate. **Inflorescence** a single flower produced successively, subtended by a spathe 1-1.5 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bract thin, tubular, 5-10 mm long; pedicel 8-14 mm long; ovary 5 mm long; **sepals** yellow, glabrous, the dorsal sepal ovate, subacute, 6-8 mm long, 5-5.5 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 6-7 mm long, 5.5-6.5 mm wide, 4-veined; **petals** yellow, broadly elliptical, obtuse, shortly acuminate, denticulate, 4.5-6.5 mm long, 2.75-3 mm wide, 1-veined; **lip** yellow, suffused with purple-brown, thick, broadly ovate-subtrilobed, 3 mm long, 3 mm wide, the apical margins thickened, more or less transverse and shortly apiculate, the sides erect, broadly rounded, the disc concave above a thick, erect, pyramidal callus with the glenion at the base, the base narrowed, truncate, hinged to the tip of the column-foot; **column** stout, 1.5 mm long, 2 mm wide, the foot 1 mm long, the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: forest above Mindo, alt. ca. 2000 m, 11 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4739* (Holotype: SEL); below Mindo, alt. 1600 m, 13 Mar. 1982, *C. Luer, J. Luer & A. Hirtz 7325* (SEL).

Apparently endemic in one locality in northwestern Ecuador, this species, vegetatively similar to many other species in the section, is distinguished from all others by the broad, denticulate petals and a distinctive lip with erect, rounded sides, a transverse, apiculate apex, and a thick, erect callus at the base that resembles an epiglottis.

Acronia erythrium (Luer) Luer, comb. nov.

Ety.: From the Greek *erythrium*, "a little red one," referring to the flowers.

Bas.: *Pleurothallis erythrium* Luer, Selbyana 2: 386, 1978.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-11 cm long, enclosed below the middle by a closely appressed, thin, tubular sheath, and 2-3 other sleaths at the base. **Leaf** horizontal, coriaceous, ovate, acute, 2.5-5 cm long, 1-2.75 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single, red-purple to brownish flowers, subtended by a reclining spathe 5-10 mm long; peduncles 1-2 mm long within the spathe; floral bracts thin, tubular, 2-4 mm long; pedicels 3-7 mm long; ovary 2.5-3 mm long; **sepals** glabrous, the dorsal sepal oblong-ovate, subacute, 5-6.5 mm long, 2-3 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 4.5-6 mm long, 3.5-4.5 mm wide, 4-veined; **petals** narrowly linear-oblong or narrowly linear triangular, acute, microscopically erose, 4-5 mm long, 0.5-0.75 mm wide, 1-veined; **lip** oblong-ovate, round at the apex, 2.5-3.5 mm long, 2-2.5 mm wide, the base subtruncate with a glenion, shortly deflexed and concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 1 mm wide, the foot obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: between Loja and Zamora, alt. 2000 m, 6 Mar. 1977, *C. Luer, J. Luer & K. Cordoba 1626* (Holotype: SEL); same area, alt. 1400 m, 29 Sept. 1961, *C.H. Dodson & L.B. Thien 815* (SEL). **Napo**: north of Archidona, alt. 600 m, 27 July 1975, *C. Luer, G. Luer & S. Wilhelm 517* (SEL); near Río Jatunyacu west of Tena, alt. 600 m, 21 Feb. 1982, *C. Luer & A. Hirtz 6890* (SEL). **Pastaza**: along Río Negro, alt. ca. 1000 m, Mar. 1976, *C. Luer & R. Kent 1006* (SEL); Mera, alt. ca. 1100 m, 25 May 1968, *G. Harling, G. Storm & B. Ström 9861* (GB); Pozo petrolero "Moretecocha," east of Puyo, alt. 580 m, 4-21 Oct. 1990, *E. Gudiño et al. 1057* (MO, QCNE); south of Puyo toward Macas, alt. 950 m, 28 Feb. 2001, *C. Luer, J. Luer & A. Hirtz 19550* (MO).
COLOMBIA: Without collection data, cultivated at Colomborquídeas, 20 Apr. 1997, *R. Escobar 8327* (MO), C. Luer illustr. 16625.

This species is similar, both vegetatively and florally, to the numerous, widely distributed, similar taxa that are treated as species-complex *Acronia phyllocardioides*. *Acronia erythrium* is a slender plant with elongated ramicauls and spreading, ovate leaves deeply cordate at the base. The small, red-purple flowers are characterized by subacute sepals; narrowly linear-oblong, minutely erose petals; and an ovate, obtuse to subacute lip.

Acronia erythrium is distinguished from *A. phyllocardioides* by larger, red-purple flowers with proportionately longer and narrower petals. Because yellow, red or purple occurs in many species of many genera, color is often discounted taxonomically. However, no yellow flower of *A. erythrium* has been noted.

Acronia escobarii Luer, sp. nov.

Ety.: Named in honor of Rodrigo Escobar R. of Medellín, foremost in the orchids of Colombia.

Species haec *A. bivalvis* (Lindl.) Luer affinis, sed sepalo dorsali obovato apice rotundo et labello obovato arcuato differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 25-35 cm long, with a close, tubular, spotted sheath on the lower third and 2-3 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, 11-13 cm long, 6-8 cm wide, the base sessile, deeply cordate, with the basal lobes ca. 2 cm deep and overlapping. **Inflorescence** a fascicle of successive, single flowers, subtended by a

spathe 1.5 cm long; peduncles less than 5 mm long, concealed within the sheath; floral bracts thin, tubular, 10 mm long; pedicels 10-12 mm long; ovary 6 mm long; **sepals** microscopically ciliate, the dorsal sepal erect, obovate, round at the apex, 13 mm long, 7 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 11 mm long, 9 mm wide, 6-(8-)veined; **petals** decurved, subfalcate-oblong, acute, minutely denticulate, 8 mm long, 2 mm wide, 1-veined; **lip** thick, arcuate, obovate, 6 mm long, 4.5 mm wide, verruculose, the apex broadly obtuse or rounded, the base truncate, broadly concave on the end to accommodate the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, bulbous, the anther, rostellum and stigma apical.

COLOMBIA: Without collection data: flowered in cultivation at Colomborquídeas 26 Mar. 1997, *R. Escobar 8304* (Holotype: MO), C. Luer illustr. 18532.

This Colombian species is characterized by a large, deeply cordate leaf; a large, widely spread flower similar to that of *A. bivalvis*, but with an obovate dorsal sepal round at the apex; broad, minutely denticulate petals; and a thick, arcuate, minutely verrucose, obovate lip.

Acronia excavata (Schltr.) Luer, comb. nov.

Ety.: From the Latin *excavatus*, "excavate," referring to the deeply concave lip.

Bas.: *Pleurothallis excavata* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 287, 1923.

Syn.: *Pleurothallis concaviflora* C. Schweinf., Bot. Mus. Leafl. 4:114, 1937.

Ety.: From the Latin *concaviflorus*, "with concave flower," referring either to the flower or the lip.

Syn.: *Pleurothallis imago* Luer, Selbyana 3: 318, 1977.

Ety.: From the Latin *imago*, "a likeness," alluding to the similarity to *A. excavata*.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect or horizontal, 2-7 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect in relationship to the leaf, horizontal, rigid, thickly coriaceous, ovate, subacute to obtuse, 2-4 cm long, 1-2 cm wide, the base broadly cuneate, sessile. **Inflorescence** fasciculate, a single, successive, non-resupinate flower, subtended by a spathe 7-10 mm long, at the base of the leaf; peduncles 3-4 mm long, concealed within the sheath; floral bracts thin, tubular, 4-5 mm long; pedicels 7-8 mm long; ovary 2-4 mm long; **sepals** fleshy, yellow-green, suffused and spotted with purple, glabrous externnally, more or less papillose within, the middle sepal broadly elliptical-ovate, obtuse, 4-6 mm long, 3.25-4 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, deeply concave, obtuse synsepal, 3-6 mm long, 4-6 mm wide, 4-veined; **petals** yellow-green, marked or suffused with purple, fleshy, oblong, carinate externally, 2-2.5 mm long, 0.8-1 mm wide, 1-veined, the apex concave, incurved, acute; **lip** purple or yellow, thick, ovoid, deeply concave, 2.5-3 mm long, 1.75-2 mm wide, with the apex obtuse, long-acuminate, with the basal angles erect, elongate, acute, flanking the column, the base concave on the end, hinged to the base of the column; **column** stout, 1 mm long, 1 mm wide, the foot obsolescent, the anther, rostellum and stigma apical.

COSTA RICA: **Alajuela**: vicinity of San Ramón, 1921, *G. Acosta s.n.* (Holotype destroyed at B, lectotype here designated: AMES 31280, illustration of the type); hills of San Pedro de San Ramón, 14 Nov. 1927, *A.M. Brenes (134) 1668* (holotype of *A. concaviflora*: AMES). Without collection data, ca. 1867, alt. 4,000 ft., *A. Endres 49, 76, 88* (W); San Carlos, Zapote, alt. 1375 m, Oct. 1938, *A. Smith H1275* (AMES). **Guanacaste**: northeast of Santa Elena, upper San Gerardo, alt. 1550 m, 20 Nov.1988, *W. Haber & W. Zuchowski 8820* (CR, MO); Abangares, north of Monteverde at Río Negro, alt. 1300 m, 2 Feb. 1989, *W. Haber & W. Zuchowski 9094* (CR, MO); Las Nubes, northwest of Monteverde, alt. 1200 m, 31 Aug. 1989, *W. Haber & W. Zuchowski 9482* (CR, MO).
PANAMA: **Chiriquí**: vicinity of Fortuna Dam, trail across Río Hornito, alt. 1100-1350 m, 7 Sept. 1987, *G. McPherson 11665* (MO). **Coclé**: El Valle de Anton, alt. 600 m, 10 Dec. 1939, *P.H. Allen 2058* (MO). **Panama**: La Eneida, region of Cerro Jefe, 16 Dec. 1967, *R.L. Dressler 3234* (MO); Altos de Pacora road, alt. 650 m, 4 Mar. 1976, *C. Luer, J. Luer, R.L. Dressler & P. Taylor 732* (holotype of *P. imago*: SEL); Cerro Jefe, collected Jan. 1976, cultivated Jan. 1994, *F L Stevenson 81-0721-1* (MO). **Coclé**: north of El Valle, La Mesa, alt. 1000 m, 21 Jan. 1941, *P.H. Allen 2317* (AMES): above El Valle, alt. ca. 1000 m, 15 Aug. 1971, *H. Wiehler 71297a* (SEL).

This species is occurs locally in Costa Rica and Panama. It is characterized by thickly coriaceous, sessile leaves, and a gaping, non-resupinate flower that sits on top. The sepals are variously spotted and suffused with purple. The synsepal is deeply cucullate, the subcarinate petals curve to either side of the lip, and the lip is ovoid and deeply concave and apiculate. An erect pair of basal lobes flank the column.

Acronia fantastica (Ames) Luer, comb. nov.

Ety.: From the Latin *fantasticus*, "fantastic," in allusion to the unusual flower.

Bas.: *Pleurothallis fantastica* Ames, Bot. Mus. Leafl. 4: 45, 1936.

Syn.: *Pleurothallis horichii* Luer, Die Orchidee 36(1): 23, 1985.

Ety.: Named for Claus Horich, fabled collector of Costa Rican orchids, who collected this species.

Syn.: *Zosterophyllanthos horichii* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium in size, epiphytic, caespitose, more or less pendent; roots slender. Ramicauls descending, horizontal, 7-20 cm long, slightly compressed above, enclosed below the middle by a closely appressed, tubular sheath and another 1-2 sheaths at the base. **Leaf** spreading, pendent, coriaceous, narrowly ovate, acute, with sides more or less incurved, 9-17 cm long, 1.7-2.5 cm wide, concave at the subcordate to cuneate base, with the margins decurrent on the ramicaul for ca. 2 cm. **Inflorescence** a solitary, successive flower, emerging above the base of the leaf, with a spathe 5-7 mm long; peduncles 1-2 mm long within the spathe; floral bracts thin, tubular, 4-5 mm long; pedicels 5-8 mm long; ovary 3.5 mm long; **sepals** white, glabrous, the dorsal sepal elliptical-ovate, obtuse, 7-8 mm long, 4-5 mm wide, 5-veined, the lateral sepals connate into a broadly elliptical-ovate, obtuse, minutely bifid synsepal, 5.5-6 mm long, 5-6.75 mm wide, 6-(8-)veined; **petals** snow white, elliptical-oblong, oblique, concave, acute, 5.5-6.5 mm long, 2.5 mm wide, 3-veined, with the margins minutely cellular; **lip** white, transversely trilobed, 4 mm wide, the lateral lobes oblong, obtuse, each 1.5 mm long, 2.5 mm wide, minutely subverrucose, the middle lobe purple, oblong, shallowly grooved, recurved, obtuse, 1 mm long, the disc with a pair of rounded, purple calli between the middle lobe and the base, the base subtruncate, hinged to the column-foot; **column** white, stout, terete, 1 mm long, 1.5 mm broad, the foot obsolescent, the anther, rostellum and stigma apical.

COSTA RICA: **San José**: Vicinity of El General, alt. 850 m, Jan. 1936, *A.F. Skutch 2391* (Holotype: AMES). Without locality, obtained from Cl. Horich, cultivated in Bern, Switzerland, 1985, by R. Jenny, *C. Luer 7442* (holotype of *P. horichii*: SEL).

This species is uncommon in Costa Rica where it is endemic. It was first collected by Skutch and described by Ames from a specimen mounted in an erect position, which led to the spurious description of the species a half-century later. It is not the peduncle that is adnate to the leaf as originally stated, but it is the ramicaul that is adnate to the leaf.

Pleurothallis fantasica is a most unusual species with narrow, acuminate, pendent, concave leaves that are decurrent on the ramicaul for about two centimeters. The white sepals are widely spread exposing a transversely three-lobed lip.

Acronia folsomii Luer & Endara, sp. nov.

Ety.: Naned for James A. Folsom who collected this species.

Species haec *A. homalanthae* Schltr. affinis, sed habitu floribusque majoribus, spatha grandi latiore, sepalis obtusis, petalis oblongis serrulatis et labello ovato obtuso serrulatis differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, terete, 10-25 cm long, with a tubular sheath on the lower third and 2-3 sheaths at the base. **Leaf** coriaceous, spreading, ovate, obtuse, acuminate, 7-9 cm long, 4-6.5 cm wide, the base deeply cordate, sessile. **Inflorescence** 2-8 single flowers produced simultaneously from a broad spathe 1 cm long at the base of the leaf; peduncles 2-3 mm long; pedicels 5-6 mm long; floral bract 5 mm long; ovary 3 mm long; **sepals** yellow, more or less suffused with purplish brown, glabrous, the dorsal sepal elliptical, obtuse, 13 mm long, 7 mm wide, 5-veined, the lateral sepals connate into an ovate, subacute synsepal, 12 mm long, 7.5 mm wide, 6-veined; **petals** oblong, oblique, subacute, serrate, 6 mm long, 1.5 mm wide, 1-veined; **lip** ovate, obtuse, serrate, the midvein thickened beneath the apex, 5.5 mm long, 3.5 mm wide, the disc shallowly concave with a glenion with elevated margins at the base, the base concave, hinged to the base of the column-foot; **column** stout, semiterete, 1 mm long, 1.75 mm wide, the anther and transverse stigma apical.

PANAMA: **Chiriquí**: Cerro Colorado, along ridge road near border with Bocas del Toro, alt. 1400-1700 m, 24 Oct. 1977, *J.A. Folsom 6096* (Holotype: MO; Isotype: SEL), C. Luer illustr. 20448; same collection data, *J.A. Folsom 6094* (MO); Cerro Colorado, 19 Feb. 1977, *C. Luer, J. Luer & R.L. Dressler 1467* (SEL); border between Chiriquí and Bocas del Toro, access road above mine, alt. 1600-1700 m, 14 Aug. 1977, *J.A. Folsom, G. Small & R. Robbins 4738* (MO): Fortuna Dam site, top of mountain above camp, alt. 1700 m, 13 Sept. 1977, *J.A. Folsom, R.L. Dressler & K. Dressler 5437* (MO), C. Luer illustr. 20812.

This large species is apparently restricted to the mountains of western Panama. It is most similar to the sympatric *Acronia homalantha*, but is characterized by a larger habit with stout ramicauls that bear a horizontal, deeply cordate leaf. The larger flowers are borne singly, or in a few-flowered fascicle from a short but large and broad spathe at the base of the leaf. The sepals are obtuse, the dorsal is six-veined, the petals are oblong, and the lip is oblong with the apex rounded. The petals are minutely serrate in Folsom's first collection, but are smooth in subsequent collections, all else being equal.

Acronia fonnegrae Luer & Endara, sp. nov.

Ety.: Naned for Ramiro Fonnegra of Medellín, Colombia, of the Curso Taxonomía Vegetal.

Species haec *A. bivalvis* Lindl. affinis, sed foliis latissime ovate, profundissime cordato, spatha conspicua suberecta, sepalo dorsali synsepaloque ovatis, petalis oblongis glabris integris et labello sagittato integro distinguitur.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, terete, 13-15 cm long, with a tubular sheath on the lower third and another at the base. **Leaf** coriaceous, spreading, broadly ovate, obtuse, acuminate, 8-9 cm long, 5.5 cm wide dry, sessile, the base deeply cordate, 2.2 cm deep, overlapping. **Inflorescence** a single, successive flower, produced from a broad, suberect spathe 1.3 cm long at the base of the leaf; peduncles within a suberect spathe, pedicels ca. 7 mm long; floral bracts ca. 5 mm long; ovary 3 mm long; **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute to acute, 5 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 5 mm long, 3 mm wide; **petals** oblong, oblique, acute, entire, 3 mm long, 1.2 mm wide, 1-veined; **lip** sagittate, subacute, entire, 3.5 mm long, 2.2 mm wide, with obtuse basal lobes flanking the column, the base concave, hinged to the base of the column-foot; **column** semiterete, 0.5 mm long, 1 mm wide, the anther and bilobed stigma apical.

COLOMBIA: **Antioquia**: Frontino, Nutibara, Alto de Cuevas, Quebrada del Oso, alt. 1900 m, 22 Apr. 1991, *R. Fonnegra 3496* (Holotype: HUA; Isotypes: MO, SEL), C. Luer illustr. 20453.

This species, apparently restricted to the Western Cordillera of Colombia, is characterized by broad, shortly acuminate leaves that are very deeply cordate at the base with the lobes overlapping. The small flower, similar to *A. bivalvis*, emerges from a conspicuous, suberect spathe. No color notes accompany the specimen. The dorsal sepal is subacute while the similar synsepal is obtuse; the petals and lip are glabrous and entire. The lip is sagittate with basal lobes flanking the column.

Acronia fossulata (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *fossulatus*, "with a little ditch," referring to the cavity at the base of the lip.

Bas.: *Pleurothallis fossulata* Luer & R.Escobar, Orquideología 21: 91, 1998.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 35-45 cm long, with a close, tubular sheath on the lower third and 2-3 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, deeply cordate, acute, acuminate, 12-13 cm long, 5-7 cm wide, the base sessile, with basal lobes 2-3 cm deep. **Inflorescence** a fascicle of successive, single flowers, 2-3 often simultaneous, subtended by a spathe 8-10 mm long; peduncles less than 5 mm long, concealed within the sheath; floral bracts thin, tubular, 7-8 mm long; pedicels 10 mm long; ovary 6 mm long; **sepals** red-brown, glabrous, the dorsal sepal broadly oblong, obtuse, shallowly concave, 11 mm long, 5.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 10 mm long, 7.5 mm wide, 4-veined; **petals** red, glabrous, oblong-subfalcate, acute, 5 mm long, 0.8 mm wide, 1-veined; **lip** red-purple, oblong-ovate, 5.5 mm long, 3.75 mm wide, convex above the middle and broadly rounded at the apex, concave beneath with a rounded callus beneath the tip, the margins and disc smooth, the glenion at the base deeply sulcate between a pair of triangular calli, the base cordate with rounded, shallowly concave basal lobes, concave on the end centrally to accommodate the bulbous column-foot; **column** stout, 2 mm long, 2.2 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

COLOMBIA: **Huila**: Belén, alt. 2000 m, collected by J.L. Aguirre, July 1992, cultivated at Colombor-quídeas Feb. 1997, *R. Escobar 5203* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 18445. **Antioquia**:

Parqué Nacionál Natural "Las Orquídeas," Río Calles, alt. 1420 m, *A. Cogollo, J.G. Ramírez & O. Alvarez 2577* (JAUM, MO); Parqué Ecológico Piedras Blancas, alt. 2350 m, *R. Fonnegra, A. Acevedo & C.I. Builes 5320* (HUA, MO). **Nariño**: Monopamba, alt. ca. 1800 m, collected by J.L. Aguirre, cultivated at Colomborquídeas, 26 Feb. 1997, *R. Escobar 8282* (MO).
ECUADOR: **Carchi**: between Tulcán and Maldonado, alt. 2900-3100 m, 2 Mar. 1974, *G. Harling & L. Andersson 12425* (GB); same area, alt. 2000 m, 21 Feb. 1978, *C. Luer, J. Luer & A. Hirtz 2704* (SEL). **Imbabura**: between Carolina and Buenos Aeres, alt. 1950, 17 Jan. 1987, *C. Luer, J. Luer, A. Hirtz et al. 12347* (MO).

This large species from southern Colombia and northern Ecuador is variable in the width of the leaves and in the number of veins in the dorsal sepal. The dorsal sepal of the plant described from Colombia had three veins, but other plants with similar floral parts have incomplete five veins, complete five veins, or incomplete seven veins in the larger flowers. The lip is most diagnostic. It is oblong-ovate, and rounded and convex above the middle, and somewhat concave across the middle, so that the lateral profile resembles a camel. The base is truncate with a glenion in a sulcus between a pair of more or less triangular calli with cavities on either side.

Acronia galerita (Luer) Luer, comb. nov.

Ety.: From the Latin *galeritus*, "helmeted," referring to the deeply concave dorsal sepal.
Bas.: *Pleurothallis galerita* Luer, Phytologia 49: 206, 1981.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect to horizontal, 9-15 cm long, with a close, tubular sheath on the lower third and 2-3 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, oblong, shortly acuminate, acute, 7-8 cm long, 1.5-2.8 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 8-12 mm long; peduncles 1-4 mm long, concealed within the sheath; floral bracts thin, tubular, 5 mm long; pedicels 7 mm long; ovary 4 mm long; **sepals** purple, suffused with darker purple along the veins, microscopically ciliate-pubescent, carinate along the veins, the dorsal sepal broadly ovate, obtuse, abruptly short-acuminate, deeply concave, 9 mm long, 6.5 mm wide unexpanded, 7-veined, the lateral sepals pubescent, connate into an ovate, acute lamina, 8 mm long, 4.5 mm wide, 4-veined; **petals** dark purple, decurved, falcate-oblong, subacute, denticulate, 4.5 mm long, 1 mm wide, 1-veined; **lip** erect, broadly subovate, 3.5 mm long, 3.5 mm wide, papillose, the margins fringed, the sides revolute for a short distance above the middle, the obtuse apex apiculate, the disc shallowly sulcate, the base broadly and deeply concave on the end to accommodate the bulbous column-foot; **column** stout, 0.75 mm long, 1.25 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

ECUADOR: **Imbabura**: Selva Alegre, epiphytic in forest, alt. 2730 m, 1 May 1981, *C. Luer, J. Luer & A. Hirtz 6040* (Holotype: SEL). **Bolívar**: between Guaranda and Caluma, alt. 2800 m, 10 May 1982, *C. Luer & S. Dalström 7260* (SEL).

This small relative of *Acronia grandiflora* is apparently endemic in the forests west of Otavalo in northern Ecuador, where it is rarely collected. It seems positioned between *A. deflexa* and *A. grandiflora*. The deeply concave, seven-veined dorsal sepal is much broader than the pubescent, narrowly ovate synsepal. The decurved petals and the erect, ovate lip are fringed and papillose. A small portion of the margins of the lip above the middle is recurved.

Acronia ganymedes (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named for Ganymedes, mythological cup-bearer of the gods.
Bas.: *Pleurothallis ganymedes* Luer & R.Escobar, Orquideología 14: 148, 1981.
Syn.: *Zosterophyllanthos ganymedes* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 20-60 cm long, with a tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** deep green, spreading, rigidly coriaceous, narrowly ovate, acuminate, acute, 15-18 cm long, 3.3-4.8 cm wide, the base sessile, deeply cordate. **Inflorescence** a succession of single flowers, subtended by a spathe ca. 1 cm long; peduncles 2-5 mm long, concealed within the sheath; floral bracts thin, tubular, 13-18 mm long; pedicels 15-20 mm long; ovary dark purple, 10 mm long; **sepals** dark red-purple, subcarinate, the dorsal sepal erect, broadly ovate, subacute to obtuse, 21 mm long, 14 mm wide, 7-veined, the lateral sepals connate into a deeply

concave, ovate, obtuse synsepal, 18 mm long, 21 mm wide expanded, 12-veined; **petals** dark purple, expanded, obliquely triangular, acute, 10 mm long, 3.5 mm wide, 3-veined; **lip** red, broadly ovate to suborbicular, 6.5 mm long, 6.5 mm wide, rounded at the apex with a small tubercule beneath, the disc with a small glenion at the base, the base broadly truncate between acute, basal angles, concave on the end to accommodate the column-foot; **column** red, stout, 2 mm long, 3.5 mm wide, the foot thick, the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: forested mountains east of Medellín, collected by W. Teague, O. Arango & G. Misas, cultivated by H. Ripley in San Francisco, CA, 16 Aug. 1979, *C. Luer 4086* (Holotype: SEL; Isotype: JAUM).

This uncommon species is known only from the original collection. It is characterized by a large, dark purple flower borne on top of a large, narrowly ovate leaf. The erect dorsal sepal is broad, the synsepal is deeply concave, the spreading petals are triangular and acute, and the lip is suborbicular.

Acronia gargantua (Luer) Luer, comb. nov.

Ety.: Named for the monstrous character *Gargantua* noted for an immense appetite.

Bas.: *Pleurothallis gargantua* Luer, Lindleyana 11: 161, 1996.

Plant huge, terrestrial, caespitose; roots coarse. Ramicauls stout, erect, approximately 1 meter tall, enclosed by a tubular sheaths below the middle and 3-4 other sheaths about the base. **Leaf** spreading, coriaceous, broadly ovate, acute, 25-35 cm long 18-20 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of single, successive flowers borne on top of the leaf from a spathe 2-2.5 cm long; peduncle 1.5-2 cm long; floral bract 10 mm long; pedicel 12 mm long; ovary 10 mm long; **sepals** bilabiate, the dorsal sepal light green, suffused with rose, ovate, subacute, 50-55 mm long, 35-38 mm wide, ca. 19-veined, the lateral sepals brick red, covered by minute, blackish red papillae except for a green crescent around the base of the column, connate into an ovate, subacute synsepal, 45-50 mm long, 35 mm wide, 18-20-veined; **petals** thick, flanking the lip, covered with minute blackish red papillae, oblong, obtuse, 20 mm long, 12 mm wide, 7-veined; **lip** light yellow, glabrous, transversely obovate-reniform, convex, rugulose, 8.5 mm long, 12 mm wide, the apex transverse with a pair of convex, cheek-like swellings the disc with a low, white, triangular callus, the base subtruncate, hinged on the flattened end to the column-foot; **column** stout, semiterete, 1.5 mm long, 3.5 mm wide, the anther and entire stigma apical.

ECUADOR: **Carchi**: terrestrial in a steep forest between Maldonado and Chical, alt. 1500 m, July 1991, cultivated in Chamblee, GA, *F L Stevenson 92-0115-1* (Holotype: MO); same area, 15 Jan. 1992, *C. Luer, J. Luer, A. Jesup & A. Jesup 16022* (MO).

This monstrous, terrestrial species, similar vegetatively to the sympatric *Pleurothallis colossus* Kraenzl. ex de Kerchowe, is reminiscent of an *Anthurium* Schott. Huge, ovate, deeply cordate leaves are held horizontally by stout ramicauls a meter high. Instead of numerous, small flowers, an immense, solitary flower is produced. When expanded, the flower measures ten centimeters between the tips of the dorsal sepal and the synsepal. It is the largest known flower in the genus *Acronia*.

The broad, multiveined dorsal sepal is glabrous, but the equally large synsepal is covered with minute blackish red papillae except for a smooth, green collar around the base of the column. The broad, flat, similarly papillose petals flank the lip. The transverse, convex lip is minutely rugulose.

The flower is basically similar to the much smaller-flowered *Acronia marthae* Colombia. Other giant-leaved relatives include *A. imperialis, A. reginae* and *A. teaguei*.

Acronia geographica (Luer) Luer, comb. nov.

Ety.: From the Latin *geographicus*, "geographic," in allusion to the disc of the labellum.

Bas.: *Pleurothallis geographica* Luer, Selbyana 3: 310, 1977.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-15 cm long, with 2-3 tubular sheaths near and at the base. **Leaf** spreading, rigidly coriaceous, ovate, acute, slightly acuminate, 5.5-7 cm long, 2-2.4 cm wide, the base sessile, cordate. **Inflorescence** a succession of single flowers, borne on top of the leaf, subtended by a spathe ca. 1 cm long at the base; peduncles 2-3 mm

long, concealed within the sheath; floral bract thin, tubular, 6-7 mm long; pedicel 7-8 mm long; ovary 4-5 mm long; **sepals** light yellow, glabrous, the dorsal sepal erect, broadly elliptical-obovate, obtuse, 8 mm long, 5 mm wide, 3-veined, the lateral sepals suffused with rose, connate into an ovate, obtuse synsepal, 7 mm long, 6 mm wide, 6-veined; **petals** yellow, expanded, linear-oblong, acute, 5 mm long, 1 mm wide, 1-veined; **lip** red-purple, ovate, obtuse, 3.5 mm long, 2.5 mm wide, the disc shallowly concave and sulcate, with the surface minutely rugose, verrucose and glebulose, with a small glenion at the base, the base broadly truncate, concave on the end to accommodate the column-foot; **column** green, stout, 1.5 mm long, 1.5 mm wide, the foot thick, abbreviated, the anther and stigma apical.

ECUADOR: **Loja**: road north of Loja, alt. 2000 m, 5 Mar. 1977, cultivated 5 Apr. 1977, *C. Luer, J. Luer & K. Cordoba 1579* (Holotype: SEL). **Zamora-Chinchipe**: Alto Romerillo, Río Jamboe, alt. 1500 m, 19 May 1986, *D. D'Alessandro 721* (MO).
PERU: **Pasco**: Oxapampa, Río El Tunqui, alt. 1720 m, 2 Jan. 1984, *D.N. Smith & J. Alban 5506* (MO).

Similar to those species closely allied to *Acronia bivalvis*, this species is easily identified by the irregular surface of the lip, like a geographical relief map.

Acronia giraffa (Luer) Luer, comb. nov.

Ety.: From the Latin *giraffa*, "a giraffe," in allusion to the long-necked column.
Bas.: *Pleurothallis giraffa* Luer, Selbyana 5: 165, 1979.

Syn.: *Zosterophyllanthos giraffa* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-19 cm long, with a tubular sheath below the middle and 2-3 tubular sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, slightly acuminate, 5-9 cm long, 1.5-3.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a succession of single flowers, borne on top of the leaf, subtended by a spathe 6-15 mm long at the base of the leaf; peduncle 4-5 mm long; floral bract thin, tubular, 5 mm long; pedicel 10 mm long; ovary subverrucose, 4 mm long; **sepals** greenish tan, glabrous with minutely ciliate margins, the dorsal sepal ovate, subacute, 9 mm long, 5.5 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 8 mm long, 6.5 mm wide, 4-veined; **petals** purple, forwardly directed, linear-oblong, acute, denticulate, 7 mm long, 1 mm wide, 1-veined, minutely biauriculate at the base; **lip** dark purple, ovate, obtuse, minutely apiculate, minutely denticulate above the middle, 5 mm long, 3.75 mm wide, the disc shallowly concave, with a narrow glenion, narrowed below the middle to a broadly concave base, to accommodate the base of the column-foot; **column** elongate, slender, arcuate, 3 mm long, less than 1 mm wide, the foot thick, convex, 2 mm long, the anther and stigma apical.

ECUADOR: **Imbabura**: cloud forest above Apuela, alt. ca. 2000 m, 8 Feb. 1979, *C. Luer, J. Luer, R. Escobar & A. Hirtz 3942* (Holotype: SEL). **Cotopaxi**: west slope of El Corazón, alt. 1200 m, 18 Feb. 1979, *C. Luer, J. Luer & A. Hirtz 4007* (SEL). **Bolívar**: east of Balzapamba, alt. 1400 m, 16 June 1960, *C.H. Dodson 106* (MO, US).

Vegetatively not distinct in *Acronia* with an acute, ovate leaf subcordate at the base, this species is unique in the genus because of the elongated, arcuate column. However, as in all its relatives, the anther and bilobed stigma are presented facing forward at the apex. At the base, the column is thick and convex, or bulbous, which fits into a cavity at the base of the lip, similar to the articulation seen in the genera *Barbosella* Schltr. and *Crocodeilanthe* Rchb.f & Warsz.

Acronia giraldoi (Luer) Luer, comb. nov.

Ety.: Named in honor of Jorge Giraldo Gensini of the University of Del Valle, Cali, Colombia, co-discoverer of this species.
Bas.: *Pleurothallis giraldoi* Luer, Orquideología 21: 125, 1999.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 17-27 cm long, with a loose, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** coriaceous, spreading, broadly cordate-ovate, obtuse, shortly acuminate, 9-11 cm long, 5-7 cm wide, the base sessile, deeply cordate with the lobes 2 cm deep. **Inflorescence** a successive, single, red-purple flower, borne from a suberect, conduplicate spathe at the base of the leaf, 14-18 mm long, 5-6 mm broad, enclosing the peduncles, pedicels and floral bracts; peduncles 2-3 mm long; floral bracts tubular, 7 mm long; pedicels ca. 10 mm long; ovary 5 mm long; **sepals** cellular-glandular within, glabrous externally, the dorsal sepal broadly ovate to suborbicular, rounded at the apex, 11 mm long, 10 mm wide, incompletely 5-veined, the lateral sepals connate into an ovate synsepal with the apex rounded, 11 mm long, 9.5 mm wide, incompletely 6-veined; **petals** oblong, denticulate-erose, cellular-glandular, subacute, oblique at the base, 8 mm long, 1.5 mm wide, 1-veined; **lip** purple, glabrous, ovoid, convex, with the sides of the basal thirds

recurved, 5 mm long, 5.25 mm wide, with the margins denticulate-erose, with the apex rounded with a tubercle beneath, with the surface of the convex apical half indistinctly demarcated into a low, rounded prominence, the base deflexed into a flat claw in apposition to the column-foot, hinged to the base of the column-foot; **column** stout, 1.5 mm long, 2.75 mm broad, the foot thick, with the anther, rostellum and stigma apical.

COLOMBIA: **Valle del Cauca**: Finca Zingara, between Cali and Buenaventura, alt. 1900 m, 15 Jan. 1994, *J. Giraldo G. & L. Olver A. 97* (Holotype: TULV), C. Luer illustr. 18414; Bitaco, road to Buenaventura, alt. 1900 m, collected by J. Aguirre, cultivated at Colomborquideas, 26 Mar. 1997, *R. Escobar 8301* (MO).

This species of southwestern Colombia is characterized by a large, broadly ovate leaf that is deeply cordate at the base. From a large, suberect spathe a purple flower with broad, rounded sepals emerges. The petals are oblong and denticulate, and the lip is prominently convex at the apex with the sides of the basal thirds revolute.

Acronia glabra (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *glaber*, "glabrous," referring to the completely smooth flower parts.
Bas.: *Pleurothallis glabra* Luer & R.Escobar, Orquideología 20: 56, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-17 cm long, enclosed by a thin, tubular sheath above the base and another at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 5-7.5 cm long 1.5-2.2 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of single, dull purple, successive flowers borne on top of the leaf from a slender spathe 9-10 mm long; peduncle 2 mm long within the spathe; floral bract 6 mm long; pedicel 4-6 mm long; ovary 3 mm long; **sepals** glabrous, the dorsal sepal elliptical-ovate, obtuse, 9 mm long, 6 mm wide, 3(5-) veined, the lateral sepals completely connate into an ovate, subacute to obtuse synsepal, 9 mm long, 7 mm wide, 4-veined; **petals** glabrous, oblong, acute, 7.5 mm long, 2.5 mm wide, 3-veined; **lip** glabrous, broadly ovate, obtuse, 3.3 mm long, 3.3 mm wide, the disc flat or very slightly concave, with a small glenion at the base, the base subtruncate, hinged on the end to the column-foot; **column** stout, terete, 0.75 mm long, 1 mm wide, the anther and entire stigma apical.

COLOMBIA: **Antioquia**: Yarumal, Quebrada El Oro along road to Briceño, alt. 1850 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14187* (Holotype: MO); San Luís, Piedra de Castrillón, alt. 1500-1750 m, 9 May 1989, *D.C. Daly, J. Betancur 5932* (NY, SEL); Urrao, Parqué Natural las Orquídeas, alt. 1500 m, 29 Nov. 1993, *Pipoly et al. 17339* (JAUM, MO).

Although not vegetatively distinct from many other members of the section with slender ramicauls bearing narrowly ovate leaves and a superficially similar flower, this species differs in a combination of a few features. All flower parts are totally glabrous and entire. The petals are broad and three-veined. The broadly ovate lip is hinged at the base without the usual flattening or being deflexed. The column is short with an entire, single-lobed stigma.

Acronia globosa (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *globosus*, "globose," referring to the subspherical flower.
Bas,: *Pleurothallis globosa* Luer & R.Escobar, Orquideología 20: 60, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-18 cm long, enclosed by a thin, tubular sheath above the base and another at the base. **Leaf** horizontal, spreading, coriaceous, ovate, acute, slightly acuminate, 6-7 cm long 2.5-3 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of single, red, non-resupinate, successive flowers borne on top of the leaf from a slender spathe 8-9 mm long; peduncle 2 mm long within the spathe; floral bract 6-7 mm long; pedicel 7-8 mm long; ovary 4-5 mm long; **sepals** glabrous, the middle sepal broadly ovate, obtuse, concave, 6 mm long, 6 mm wide, 5-veined, the lateral sepals completely connate into a transversely ovate, deeply concave synsepal, 6 mm long, 7 mm wide, 6-veined; **petals** glabrous, ovate, acute, 6 mm long, 5 mm wide, 3-veined, with a fourth vein below the middle; **lip** uppermost, broadly ovate-cordate, obtuse, 3 mm long, 3.75 mm wide, the margins minutely erose, the disc flat or very slightly convex, with a narrow glenion at the base, the base deeply cordate with the rounded basal lobes surrounding the column, the base between the lobes deflexed, hinged to the column-foot; **column** stout, terete, 1 mm long, 1.5 mm wide, the anther and entire stigma apical.

COLOMBIA: **Antioquia**: between La Unión and Sonsón, alt. 2500 m, collected by E. Valencia, 1991, flowered in cultivation at Colomborquídeas, 12 Dec. 1992, *R. Escobar 5012* (Holotype: JAUM; Isotype: MO), C. Luer illustr. 16622.

Although not vegetatively distinct from many other members of the section with slender ramicauls bearing ovate, more or less horizontal leaves, this species is easily recognized by the red, roundish, non-resupinate flowers. The middle sepals and synsepal are subspherical and concave. Projecting from either side of the flower are the broad petals. The broad, flat, cordate lip with unusually long basal lobes that surround the column is proportionately large, and it lies against the synsepal.

Acronia grandiflora (Lindl.) Luer, comb. nov.

Ety.: From the Latin *grandiflorus*, "large-flowered," referring to the size of the flower.

Bas.: *Pleurothallis grandiflora* Lindl., Edwards's Bot. Reg. sub t. 1797, 1836.

Syn.: *Humboldtia grandiflora* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Zosterophyllanthos grandiflorus* (Lindl.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender to stout, erect, 10-45 cm long, with a close, tubular sheath on the lower third and another 1-2 sheaths at the base. **Leaf** suberect or spreading, coriaceous, oblong-ovate, subacute, acuminate, 7-20 cm long, 2-6 cm wide, the base sessile, deeply cordate. **Inflorescence** a solitary large, successive flower, subtended by a spathe 15-20 mm long; peduncles 2-4 mm long, concealed within the sheath; floral bracts thin, tubular, 5-10 mm long; pedicels 10-35 mm long; ovary 7-11 mm long; **sepals** microscopically ciliate-pubescent, the dorsal sepal yellowish, often suffused with purple along the veins to make 5 or 7 stripes, ovate to broadly ovate, acute to subacute, 22-42 mm long, 12-20 mm wide, 5- to 7-veined, the lateral sepals yellowish, suffused with purple or brown, connate into an ovate, acute lamina, 20-42 mm long, 7-12 mm wide, 4- to 6-veined; **petals** yellow, red, purple or brown, expanded to decurved, falcate-oblong, acute, entire to minutely denticulate, glabrous to minutely pubescent, 10-22 mm long, 2-3.5 mm wide, 1-veined (occasionally 2-veined in large specimens); **lip** orange, red, purple or brown, erect, subovate, obtuse, 5-9 mm long, 5-9 mm wide, more or less cellular-glandular, the margins minutely denticulate, the disc more or less convex, with a glenion above the base, the base subcordate, thickened and shallowly concave on the end; **column** stout, 2 mm long, 3 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

Representative collections:
ECUADOR: **Pichincha**: epiphytic in the valley of Lloa, alt. 8,000 ft., *Hall s.n.* (Holotype: K); Pichincha, without locality, *W. Jameson s.n.* (W); terrestrial on the new road embankment between Quito and Santo Domingo, alt. ca. 2500 m, 1975, *C. Luer 855* (SEL); Cerro Azul, west flank of Illiniza, alt. 2900 m, 23 Jan. 1987, *C. Luer, J. Luer & A. Hirtz 12463* (MO). **Sucumbios**: south of Santa Barbara, alt. 2700 m, 20 Mar. 1991, *C. Luer, J. Luer & A. Hirtz 15205* (MO). **Napo**: new road east of Salcedo, alt. 3400 m, 27 May 1979, *B. Løjtnant, A. & U. Molau 13787* (AAU, GB). **Tungurahua**: vicinity of Patate, Hda. Leito, alt. 2800 m, 5 Aug. 1939, *E. Asplund 8092* (S, US); Cordillera de Los Llanganates, alt. 3100 m, 11 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11157* (MO). **Bolívar**: at pass north of Chillanes, alt. 2650 m, 11 Mar. 1991, *C. Luer, J. Luer, A. Hirtz et al. 14987* (MO). **Loja**: Parqué Nacional Podocarpus, east of Nudo de Cajanuma, alt. 2900 m, 17 Mar. 1989, *J.E. Madsen 85922* (AAU, QCA). **Zamora-Chinchipe**: road to Yangana above Valladolid, alt, 2700 m, 2 Feb. 1985, *G. Harling & L. Andersson 21449, 21456* (GB); Cajanuma Range south of Loja, alt. 2500 m, 21 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10764* (MO).
COLOMBIA: **Antioquia**: north of Santa Rosa de Osa, alt. 2650 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14136A* (MO). **Santander**: west of Velez toward Landazuri, alt. 2000 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10147, 10150* (MO). **Valle del Cauca**: El Queremal between Cali and Buenaventura, alt. 1600 m, cultivated at Colomborquídeas, 12 Dec. 1992, *R. Escobar 5026* (MO). **Putumayo**: between La Cocha and Sibundoy, alt. 2700 m, 30 July 1978, *C. Luer et al. 3102* (SEL).

Acronia grandiflora is relatively frequent in the mountainous forests of Ecuador and all three cordilleras of Colombia. It has been attributed to Venezuela because illustrations by Dunsterville of two other species (*A. siphoglossa* and *A. linguifera*

were identified as *A. grandiflora* in the Field Guide of *Orchids of Venezuela* by Dunsterville and Garay, 1979, and *Venezuelan Orchids Illustrated* Dunsterville and Garay, vol. 4, 1966, respectively. No doubt it does occur in western Venezuela because it occurs in the Eastern Cordillera of Colombia. In *Orchids of Peru*, 1958, Schweinfurth erroneously placed a locality in the desert southwest of Peru. He mistook the village Lloa just west of Quito for the Loa in the arid department of Tacna.

Although variable in size, the morphology of the flowers is reasonably constant. The sepals vary between 22 and 30 millimeters in length. The broad, concave dorsal sepal has five or seven veins. The fringed, narrow petals curve to either side, sometimes beneath an erect lip in the natural position. The lip is subquadrate to ovate, obtuse, with somewhat decurved but not acutely deflexed sides, five to eight millimeters long, and variously ciliate-denticulate.

Acronia grandiflora is most closely related to *A. sarcochila* with sepals up to 42 millimeters long, and an ovate, smooth, convex lip over one centimeter long. It is also related to *A. linguifera* and *A. adonis*, both of which have relatively large, similar flowers. *Pleurothallis linguifera* differs with a long, oblong lip with recurved sides. *Acronia adonis* differs with only three veins in the dorsal sepal and a long, erect, tubular lip formed by markedly recurved sides. Other related species include *A. deflexa* with medium-sized flowers with a smaller lip with deflexed margins above the middle. *Acronia galerita* has smaller flowers with a deeply concave, dorsal sepal. Two others with large flowers are *A. corysta* with glabrous, entire petals and lip, and *A. jupiter* with a verrucose, fringed lip with deflexed sides above the middle.

Acronia hawkinsii Luer & Endara, sp. nov.

Ety.: Named for Thomas Hawkins, collector.

Species haec *Acroniae pansamalae* (Schltr.) Luer, similis, sed floribus majoribus, labello transverse ovato ad basim non deflexo differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-16 cm long, with a tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 7.5-9 cm long, 2-2.5 cm wide, the base shallowly cordate, sessile. **Inflorescence** a successive, solitary flower borne from the base of the leaf, subtended by a reclining spathe 11-14 cm long; peduncle ca. 2-3 mm long within the spathe; pedicel ca. 10 mm long; floral bract tubular, ca. 5 mm long; ovary ca. 2 mm long; flowers reportedly red-brown, **sepals** glabrous, the dorsal sepal ovate, obtuse, 4.5-5.5 mm long, 4-4.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 4-5 mm long, 4-4.75 mm wide, 4-veined; petals oblong, obtuse, entire, 3 mm long, 1 mm wide, 1-veined; lip transversely ovate, obtuse, 2 mm long, 2.5 mm wide, the disc presumably flat, probably with a small glenion at the base (difficult to see), the base apparently not deflexed, hinged to the column-foot; **column** stout, 1.5 mm long, 1.5 mm wide, the foot thick.

HONDURAS: **Comayagua**: Cordillera de Montecillos Biological Reserve, alt. 1930 m, 9 Dec. 1991, *T. Hawkins, J. Montesinos & P. Holm 126* (Holotype: MO; Isotype: EAP), C. Luer illustr. 20820.

This species is known only from the 1991 type-collection with flowers in poor condition. The above description will need to be elaborated upon when better material is available. The leaves are narrowly ovate, shallowly cordate at the base, and borne by considerably longer, slender ramicauls. From the few flowers hydrated searching for a lip, the obtuse dorsal sepal varies between 4.5 and 5.5 centimeters long, placing it on the border between lots 3 and 4 of the key. The petals are short and broad. The lip is small and transversely ovate, and the disc is apparently featureless, except for possibly a glenion.

Acronia hemileuca (Luer) Luer, comb. nov.

Ety.: From the Greek *hemileucon*, "half white," referring to the colors of the floral parts.

Bas.: *Pleurothallis hemileuca* Luer, Selbyana 7: 118, 1982.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, more or less horizontal, 5-10 cm long, with a tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** horizontal, coriaceous, lightly suffused with purple, narrowly ovate, acute, 8-13 cm long, 1.5-2.2 cm wide, the base shallowly cordate, sessile. **Inflorescence** a successive, solitary flower upon the leaf, subtended by a reclining spathe 7-9 cm long; peduncle 2-3 mm long within the spathe; pedicel 5-6 mm long; floral bract tubular, 3-4 mm long; ovary 4 mm long; **sepals** wide-spread, glabrous externally, the dorsal sepal rose with darker rose veins, cellular-verrucose within, elliptical, obtuse, 9 mm long, 6-8 mm wide, 3-veined, the lateral sepals snow white, smooth, connate into an ovate, subacute synsepal, 8-10 mm long, 5-6 mm wide, 4-veined; petals rose, narrowly oblong-falcate, acute, serrulate, 4 mm long, 0.6 mm wide, 1-veined; lip deep purple, broadly elliptical with the apex rounded, glandular-cellular, microscopically erose, 6 mm long, 4 mm wide, the disc flat, with a small glenion at the base, the base concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, the foot thick.

PANAMA: **Chiriquí**: near the Fortuna dam site, alt. ca. 1000 m, collected by R.L. Dressler, Aug. 1976, flowered in cultivation, 23 Dec. 1976, *C. Luer 1274* (Holotype: SEL).

This species is possibly only a small, colorful variation of the *A. bivalvis*-complex, but it is distinguished from the latter by the smaller habit and smaller flower with a distinctive color-pattern. The dorsal sepal and short petals are rose, while the synsepal is snow white with a deep purple lip lying upon it.

Acronia hispidula Luer & R.Escobar, sp. nov.

Ety.: From the Latin *hispidulus*, "with short, rigid hairs," referring to the lip.

Species haec *Acrniae bivalvis* (Lindl.) Luer affinis, sed foliis anguste linear-ovatis, sepalis obtusis, petalis linear-triangularibus minute serratis et labello oblongo plano hispiduloso distinguitur.

Plant medium in size to large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 20-42 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, coriaceous, narrowly ovate, acute, acuminate, 10-16 cm long, 1.5-3 cm wide, the base sessile, cordate. **Inflorescence** a single, successive flower, subtended by a reclining spathe 12-15 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts tubular, ca. 5 mm long; pedicels 10-12 mm long; ovary 5 mm long; **sepals** fleshy, cellular-pubescent externally, the dorsal sepal yellow, elliptical-ovate, subacute to obtuse, 14 mm long, 8 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 14 mm long, 9 mm wide; **petals** expanded, linear-triangular, acute, minutely ciliate-denticulate, 7.5 mm long, 1.5 mm wide, 1-veined; **lip** oblong, flat, round at the apex, 6.5 mm long, 4 mm wide, the disc diffusely covered with short hairs, the base truncate with a small glenion, and with a short claw, hinged to the column-foot; **column** stout, 1 mm long, 2.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: Frontino, near Nutibara, alt. 1600 m, 5 May 1983, *C. Luer, J. Luer & R. Escobar 8923* (Holotype: SEL).

This species from the Western Cordillera of Colombia is related to the numerous variations of the *A. bivalvis*-complex, but it is distinguished from them by long, narrowly linear-ovate leaves, and an oblong, flat, diffusely hispidous lip.

Acronia hoeijeri (Luer & Hirtz) Luer, comb. nov.

Ety.: Named in honor of Thomas Höijer of Stockholm, Sweden, who discovered this species.

Bas.: *Pleurothallis hoeijeri* Luer & Hirtz, Lindleyana 3: 143, 1988.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, with a close, tubular sheath near the middle and 2-3 others at the base, 20-38 cm long. **Leaf** horizontal to spreading, coriaceous, broadly ovate, 12-15 cm long, 10-12 cm wide, the apex acute, acuminate, the base sessile, deeply cordate, the lobes up to 3 cm deep. **Inflorescence** a fascicle of solitary, successive, deep purple flowers, sometimes 3-4 borne simultaneously, from a reclining spathe 1.5-2 cm long, at the base of the leaf; peduncles 5-6 mm long, confined within the spathe; floral bracts 8 mm long; pedicel 8-10 cm long; ovary 8-10 mm long; **sepals** glabrous, the dorsal sepal white at the base, broadly ovate, subacute, deeply concave, 14 mm long, 9 mm wide unexpanded, 7-(9-)veined, the lateral sepals connate into an oblong-ovate, obtuse, synsepal 14 mm long, 5 mm wide, 6-veined; **petals** falcate, acute, minutely fimbriate, 5.5

mm long, 1.25 mm wide, 1-veined, curved to meet beneath the lip; **lip** thick, broadly ovate, minutely fringed, 3.5 mm long, 3 mm wide, the disc elevated with thickened, rounded margins above the margins of the lip, the apex obtuse, apiculate, sparsely and shortly spiculate, the base subtruncate, concave on the end, hinged to the column-foot; **column** dark purple, stout, 1 mm long, 1.5 mm broad, the anther and bilobed stigma apical, the foot bulbous.

ECUADOR: **Carchi**: epiphytic in forest above Maldonado, alt. 1950 m, 4 Apr. 1984, *C. Luer, S. Dalström & T. Höijer 9910* (Holotype: MO).

This spectacular species is apparently endemic in northwesternmost Ecuador. It bears a few, single flowers simultaneously on top of a large, cordate leaf. The flowers are most remarkable for their intense, deep purple color which is accentuated by the bright white of the lower half of the dorsal sepals. Protruding from the center of the flower is the unique lip, thickened with an elevated disc outlined by a high, rounded margin above the minutely fringed edge of the lip.

Acronia homalantha (Schltr.) Luer, comb. nov.

Ety.: From the Greek *homalanthos*, "a level or even flower," referring to the flat flower.
Bas.: *Pleurothallis homalantha* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 106, 1923.

Syn.: *Pleurothallis homalanthoides* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 190, 1923.
Ety.: Named for the similarity to *A. homalantha*.

Syn.: *Pleurothallis nemorum* Schltr. Repert. Spec. Nov. Regni Veg. Beih. 19: 191, 1923.
Ety.: From the Latin *nemorum*, "of open woodlands," referring to the habitat.

Syn.: *Pleurothallis nervosa* Braid, Bull. Misc. Inform. 201, 1924.
Ety.: From the Latin *nervosus*, "with nerves," referring to the more than 3-veined sepals.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-25 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect to suberect, coriaceous, ovate, acute, 6-9 cm long, 2.5-4.5 cm wide, the base sessile, cordate. **Inflorescence** a single flower, produced successively, subtended by a reclining spathe 9-11 mm long; peduncles 6-7 mm long, concealed within the sheath; floral bracts tubular, 5-6 mm long; pedicels 6-7 mm long; ovary 4 mm long; **sepals** yellow-green to pale red-brown or purple-brown, glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, 8-12 mm long, 5-6 mm wide, 5-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 7.5-10 mm long, 5-6 mm wide, 6-veined; **petals** colored as the sepals, decurved, oblong, obtuse to acute, smooth, 5-6 mm long, 0.75-1 mm wide, 1-veined; **lip** colored as the sepals, glabrous, elliptical-oblong to ovate, subacute to obtuse, 3-3.75 mm long, 2-2.5 mm wide, the disc slightly convex to slightly concave, with a glenion above the base, the base truncate, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COSTA RICA: **Cartago**: Tablazo, alt. 1900 m, July 1909, *A. & C. Brade 1160* (Holotype destroyed at B; lectotype here designated: HB; AMES 31260, illustr. of type top of sheet); Cachi, alt. 4,000-5,000 ft., cultivated at Kew, Dec. 1923, *C.H. Lankester s.n.* (holotype of *P. nervosa*: K); Turrialva, ca. 1867, *A. Endres 47, 257, 458* (W). **Alajuela**: San Pedro de San Ramón, alt. 1150 m, July 1921, *A.M. Brenes 68* (holotype of *P. homalanthoides* destroyed at B, fragment at AMES; illustr. of type); San Pedro de San Ramón, alt. 1150 m, July 1921, *A.M. Brenes 76* (holotype of *P. nemorum* destroyed at B, lectotype: *A.M. Brenes 121*: AMES, lectotype: CR; San Pedro de San Ramón, alt. 1150 m, July 1921, *A.M. Brenes 76* (holotype of *P. nemorum* destroyed at B; illustr. at AMES 30525). **Heredia**: Vara Blanca, Alt. 1800 m, 15 Sept. 1979, *C. Luer, J. Luer & K.S. Walter 4176* (K, SEL). **Puntarenas**: Monteverde Reserve, alt. 1500 m, 5 Nov. 1992, *S. Ingram & K. Ferrell-Ingram 1590* (CR, K, MO, SEL). **San José**: Carpintera, alt. 1700 m, 25 Nov. 1908, *A. & C. Brade 1115* (Syntype: HB); Cerro de la Carpintera, alt. 1500-1850 m, Feb. 1924, *A.C. Standley 34243* (AMES); La Estrella, 24 July 1925, *C.H. Lankester 1045* (AMES).
HONDURAS: **Comayagua**: Minas de Oro, alt. 4,000 ft., 25 Dec. 1932, *J.B. Edwards 330* (AMES, K).
NICARAGUA: **Matagalpa**: Macizos de Peña Blanca, alt. 1400-1500 m, 20 Jan. 1982, *W.D. Stevens, P.P. Moreno & T. Elmquist 21187* (MO).

This species is frequent in Central America. It is characterized by cordate leaves; a five-veined dorsal sepal; oblong, single-veined, glabrous petals; and an entire, ovate, obtuse lip with a small glenion. The five-veined dorsal sepal distinguishes it from what has been commonly called *P. antonensis* L.O.Williams.

Hamer's illustration in *Las Orquídeas de El Salvador*, 1974, identified as *A. homalantha* is *A. matudana*.

Acronia homeroi Luer & Endara, sp nov.

Ety.: Named for Homero Vargas, collector of this species.

Species haec *Acroniae bivalvis* et affinitatibus affinis, sed foliis anguste ovatis acuminatis, sepalis obtusis, petalis linearibus glabris et labello oblongo convexo basim unguiculato cum glenio magno distinguitur.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 15-21 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, acuminate, 8-10 cm long, 2-2.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower, subtended by a reclining spathe 8-10 mm long; peduncles ca. 2 mm long, concealed within the sheath; floral bracts tubular, 8-11 mm long; pedicels 8-11 mm long; ovary 3-4 mm long; flowers without color notes; **sepals** glabrous, the dorsal sepal obovate, obtuse, 8 mm long, 4 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 8 mm long, 4.5 mm wide; **petals** expanded, linear-oblong, acute, glabrous, 6 mm long, 0.75 mm wide, 1-veined; **lip** appears to have been striped with a darker color on the sides, oblong, convex with decurved sides, concave beneath, obtuse at the apex, 4.5 mm long, 1.5 mm wide, the disc channeled medially with a large glenion at the base, the base unguiculate, the claw 1 mm long, hinged to the column-foot; **column** stout, 1 mm long, 1 mm wide, the foot thick, elongated, with the anther, rostellum and stigma apical.

ECUADOR: **Napo**: Parqué Nacionál Llanganates, between Salcedo and Tena, alt. 2130 m, 11 Sept. 1998, *H. Vargas, E. Narváez & S. Orellana 2193* (Holotype: MO), C. Luer illustr. 20807.

This species is known only from a collection on the eastern slope of the Andes of Ecuador in the Llanganates range. It is characterized by very slender ramicauls; erect, narrowly ovate, acuminate leaves; an inconspicuous spathe; and small, glabrous flowers. The sepals are obtuse, and the petals are linear-oblong. The oblong lip is distinct with decurved sides and a large glenion above an unguiculate base. *Acronia homeroi* is related to *A. bivalvis*, but the distinct lip distinguishes it.

Acronia imperialis (Luer) Luer, comb. nov.

Ety.: From the Latin *imperialis*, "imperial," referring to the size, beauty and regal colors.

Bas.: *Pleurothallis imperialis* Luer, Selbyana 1: 186, 1975.

Syn.: *Zosterophyllanthos imperialis* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant large, epiphytic, terrestrial, caespitose; roots slender. Ramicauls stout, erect, 20-55 cm tall, enclosed by a loose, tubular sheath below the middle and 2-3 other sheaths about the base. **Leaf** spreading, coriaceous, ovate, acute, acuminate, 13-22 cm long, 4-9 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of single, successive flowers borne on top of the leaf from a spathe 1.5-2.5 cm long; peduncle 10-15 mm long; floral bract 5-10 mm long; pedicel 10-15 mm long; ovary 10-12 mm long; **sepals** glabrous, light yellow-green, suffused with rose basally, the dorsal sepal broadly ovate, subacute to obtuse, 26-30 mm long, 17-20 mm wide, multiveined, the lateral sepals connate into an ovate, subacute synsepal, 21-30 mm long, 15-16 mm wide, multiveined; **petals** purple-brown, glabrous with the margins microscopically papillose, oblong, convex, subfalcate, obtuse, 11-13 mm long, 4.5-5 mm wide, 3-veined; **lip** dark purple, glabrous, transversely obovate-reniform, 5-6 mm long, 8 mm wide, the apex broadly convex, pouch-like, with involute margins, the disc with a large glenion at the base, the base subtruncate, concave on the end, hinged on the edge to the column-foot; **column** stout, semiterete, 2 mm long, 3 mm wide, the anther and bilobed stigma apical.

ECUADOR: **Pichincha**: terrestrial on roadside between Quito and Santo Domingo, alt. 300 m, 2 Mar. 1975, *C. Luer & R. Kent 300* (Holotype: SEL). **Carchi**: above Río Blanco, between Ibarra and San Lorenzo, alt. 1400 m, 14 Dec. 1961, *C.H. Dodson & L.B. Thien 1601* (SEL); forest remnant east of Maldonado, alt. 1700 m, 17 Mar. 1991, *C. Luer, J. Luer, J. del Hierro, A. & X. Hirtz 15126* (MO); Maldonado toward Río La Plata, alt. 2200 m, 11 Jan. 1993, *A. Hirtz 5878* (MO); north of Río Mira, between Guallupe and Parambas, alt. 900 m, 16 Feb. 1996, *A. Hirtz & X. Hirtz 6292* (MO). **El Oro**: Hda. Daucay, on cacao, alt. 600 m, 11 Oct. 1993, *X. Cornejo 329* (GUAY); Cerro Azul, alt. 500 m, 15 Mar. 1995, *X. Cornejo & C. Bonifaz 3730* (GUAY).

This species, apparently confined to the western declivity of the Andes of Ecuador, is characterized by a large habit; a large, spreading, deeply cordate leaf; and a large, colorful flower. The sepals are obtuse and multiveined; the petals are broad, convex and mostly glabrous except for microscopically cellular-glandular margins; and the lip is transversely obovoid with a convex, protruding, pouch-like apex.

Acronia index (Luer) Luer, comb. nov.

Ety.: From the Latin *index*, "a pointer," in allusion to the dorsal sepal.

Bas.: *Pleurothallis index* Luer, Phytologia 47: 76, 1980.

Plant medium in size, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, round in cross-section, 5-15 cm long, with close, tubular sheaths above the base. **Leaf** thinly coriaceous, spreading, sessile, broadly ovate, 3.5-6.5 cm long, 2.5-4.75 cm wide, the apex subacute, shortly acuminate, the base deeply cordate, the basal lobes up to 1.5 cm long. **Inflorescence** a fascicle of solitary, successive flowers borne from a suberect, foliaceous spathe 10-18 mm long, 3-5 mm broad, at the base of the leaf; peduncles abbreviated, 3-4 mm long, confined within the spathe with the floral bract 5-6 mm long; pedicel 9-11 mm long; ovary 4-5 mm long; **sepals** yellow, membranous, glabrous, the dorsal sepal very narrowly ovate, acute, acutely reflexed, 15-19 mm long, 4 mm wide, 3-veined, the lateral sepals connate completely into a similar synsepal, 15-19 mm long, 4.5-6 mm wide expanded, 4-veined; **petals** yellow, very narrowly ovate, acute, acuminate, 14-18 mm long, 1.5-2 mm wide at the base, 3-veined, minutely ciliate; **lip** yellow, triangular, acute, 4-4.5 mm long, 2 mm wide, minutely pubescent, the basal angles obtuse, the disc shallowly concave, with a well-defined glenion at the base, the base subtruncate, firmly hinged to the column-foot; **column** stout, 0.5-1 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot obsolescent.

COLOMBIA: **Nariño**: La Planada above Ricaurte, alt. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer, A. Hirtz & K. Walter 4582* (Holotype: SEL). **Chocó**: San José Palmar, cultivated at Colomborquídeas, 20 Nov. 1981, *C. Luer 6721A* (SEL).
ECUADOR: **Esmeraldas**: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C.H. Dodson, D. Benzing & D. Bermudes 12361* (MO).

This species is characterized an erect, long-pedicellate, spindly flower arising from a semi-erect spathe at the base of a deeply cordate leaf. The dorsal sepal, synsepal and petals are narrowly elongated, with the dorsal sepal acutely reflexed and the petals outstretched and lightly incurved, resembling the stance of a crab spider awaiting its prey. The lip is triangular and minutely pubescent.

Acronia iris Luer & Endara, sp. nov.

Ety.: From the Latin *iris*, "rainbow," referring to the colorful flowers.

Inter species generis *Acroniae* sepalo dorsali 5-venoso, petalis oblongis dense pubescentibus, labello ovato crasso dense papilloso distinguitur.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-55 cm long, with a tubular sheath below the middle and 2-3 shorter sheaths at the base. **Leaf** horizontal, coriaceous, cordate-ovate, 8-12 cm long, 3.5-4.5 cm wide, the base sessile, cordate. **Inflorescence** a single, resupinate, flower produced successively at the base of the leaf; spathe fugacious, peduncles fasciculate, less than 1 cm long; floral bracts ca. 5 mm long; pedicels 7-13 mm long; ovary smooth, 6-7 mm long; **sepals** colorful, the dorsal sepal glabrous, yellow with brown veins, elliptical, concave and curved forward, subacute, 15 mm long, 9 mm wide, 5-veined, the lateral sepals light rose with purple veins, connate into an ovate, subacute synsepal, 15 mm long, 9 mm wide, 6-veined, diffusely and sparsely pubescent; **petals** dark purple, pubescent-denticulate, oblong, obtuse, 8 mm long, 2 mm wide, 1-veined; **lip** black, thick, ovate, 5 mm long, 3.5 mm wide, the apex rounded, convex, the disc covered with coarse papillae, more or less spiculate in the shallowly concave center, the base concave on the end, articulated with a convex column-foot; **column** purple, stout, 2 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot bulbous.

COLOMBIA: **Antioquia**: Frontino, alt. 2050 m, 3 May 1983, *C. Luer, J. Luer & R. Escobar 8932* (Holotype: MO); Nutibara, Alto de Cuevas, alt. 1700-1800 m, 19 Apr. 1988, *J.L. Luteyn, R. Callejas & O. Escobar 12075* (SEL).

This uncommon species is apparently restricted to the Western Cordillera of Colombia. It is distinguished by a long, slender ramicaul; an ovate-cordate leaf; and a relatively large, colorful flower. The dorsal sepal is 5-veined; the petals are oblong, pubescent and denticulate; and the lip is diffusely studded with papillae.

Acronia isthmica (Luer) Luer, comb. nov.

Ety.: From the Latin *isthmicus*, for the isthmus of Panama where the species was collected.
Bas.: *Pleurothallis isthmica* Luer, Selbyana 3: 322, 1977.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 4-17 cm long, with a close, tubular sheath on the lower half and 2 other sheaths at the base. **Leaf** horizontal, erect in relationship to the ramicaul, coriaceous, narrowly ovate, acute, 3-11 cm long, 1-2 cm wide, the base round, sessile. **Inflorescence** a single, successive flower, subtended by a spathe 5-7 mm long, at the base of the leaf; peduncles 2-3 mm long within the spathe; floral bract tubular, 10-12 mm long; pedicel 3-10 mm long; ovary 3 mm long; **sepals** yellow-green, pale yellow, glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, 5.5-8 mm long, 3-4 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 5.5-7 mm long, 3.5-4 mm wide, 4-veined; **petals** pale yellow, narrowly oblong, acute, 2.5-4 mm long, 0.8 mm wide, 1-veined; **lip** pale yellow or pale orange, ovate, subacute to narrowly obtuse and thickened at the apex, 3.5-4 mm long, 1.8-2 mm wide, the disc shallowly concave, with a large but narrow glenion at the base, the base subcordate, concave on the end, hinged to the column-foot; **column** semiterete, 1.5 mm long, 1.5 mm wide, the foot obsolescent, with the anther, rostellum and stigma apical.

PANAMA: **Veraguas**: near continental divide above Santa Fe, alt. 750 m, 4 Sept. 1976, *C. Luer & R.L. Dressler 1140* (Holotype: SEL); west of Santa Fe, alt. 800-1200 m, 18 Mar. 1973, *R.L. Liesner 871* (MO); slopes of Cerro Tute near Santa Fe, alt. 2,500 ft., 25 Mar. 1947, *P. Allen & G. Fairchild 4411* (AMES); base of Cerro Tuti, alt. 1000-1200 m, 4 Feb. 1977, *J.A. Folsom 1581* (MO). **Chiriquí**: Fortuna dam site, alt. ca. 1000 m, Oct. 1976, *R.L. Dressler s.n.* (SEL), C. Luer illustr. 1257A; below Volcán, collected Sept. 1976, cultivated at SEL 28 Jan. 1982, *C. Luer 6813* (SEL). **Coclé**: north of El Copé, alt. 750-900 m, 20 Jan. 1978, *T.B. Croat 44612* (MO); north of Baraguilla, 4 Apr. 1977, *J.A. Folsom & R. Robinson 2451* (MO); above Copé, alt. 900 m, 19 Feb. 1985, *C. Luer, J. Luer, R. & K. Dressler 10633* (MO).
COSTA RICA: **San José**: Parqué Nacional Braulio Carrillo, Sendero La Botella, alt. 750 m, 16 Nov. 1990, *S. Ingram & K. Ferrell-Ingram 708* (CR, F, MO, SEL). **Puntarenas**: Sendero San Luis, alt. 1400 m, *W.A. Haber & E. Bello 27 Aug. 1985* (MO). Without locality, ca. 1867, *A. Endres 55, sketch 138* (W); alt. 600-750 m, *G. Carnevali 3831* (MO); without locality, cultivated Chamblee, GA, 11 July 1974, *F.L. Stevenson 71174-5* (SEL), C. Luer illustr. 1257B.
HONDURAS: *Cópan*: between San Joaquin and Quebrada Grande, Parque Nacional Cerro Azul, alt. 1540 m, 8 Feb. 1992, *T. Hawkins 192* (EAP, MO, TEFH).

This species, apparently confined to Central America, is similar to the frequent and widely distributed *Acronia discoidea*. It is distinguished from the latter by a narrowly ovate leaf that is broader and shallowly cordate at the rounded base, and with a larger spathe, and an oblong-ovate lip. *Acronia discodea* is variable vegetatively, but the leaves are cuneate-acuminate, not round at the base; and the lip is more oblong-quadrate with a large, broad glenion.

Acronia jaramilloi (Luer) Luer, comb. nov.

Ety.: Named for Roberto Jaramillo Mejía of Bogotá, Colombia, who collected this species.
Bas.: *Pleurothallis jaramilloi* Luer, Orquideología 22: 56, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls suberect to horizontal, slender, 5-8 cm long, with a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** horizontal, 90° from axis of the ramicaul, coriaceous, cordate-ovate, acute, slightly acuminate, 5-7 cm long, 1.8-2.5 cm wide, the base cordate, sessile. **Inflorescence** a fascicle of solitary, successive flowers, from an erect, foliaceous spathe 1-1.5 cm long, ca. 0.5 cm wide, at the base of the leaf, enclosing peduncles, pedicels and floral bracts; peduncles 4-5 mm long; floral bracts 5-7 mm long; pedicel 7-9 mm long; ovary 3 mm long; **sepals** dark purple, glabrous, the dorsal sepal ovate, acute, 9.5 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute, minutely bifid synsepal 9 mm long, 5 mm wide, 4-veined, forming a broad, shallow mentum below the column-foot; **petals** purple, minutely erose-fimbriate, narrowly linear-oblong, slightly arcuate, acute, 7.5 mm long, 1.5 mm wide, 1-veined; **lip** purple, fleshy, elliptical-ovate, with minutely irregular margins, obtuse, 4 mm long, 2.5 mm wide, the disc shallowly concave centrally, the surface of the disc lightly wrinkled, with an elevated, convex glenion at the base, flattened on the end, hinged to the column-foot; **column** stout, 1.5 mm long, the anther and bilobed stigma apical, the foot short, thick, pedestal-like.

COLOMBIA: **Boyacá**: northeast of Arcabuco, near border with Santander del Sur, alt 2600 m, 7 May 1972, *R. Jaramillo M. 20254* (Holotype: COL; Isotype: AMES), C. Luer illustr. 19318.

This species from the Eastern Cordillera of Colombia is distinguished by the large, erect spathe at the base of a horizontal, cordate leaf. The flower is borne a few millimeters beyond the spathe. The dorsal sepal and nearly equal synsepal are ovate and acute, the petals are proportionately large, slightly arcuate, oblong, acute, and minutely fringed. The lip is thick, elliptical, obtuse, shallowly concave centrally, and with a convex glenion at the base.

Acronia jupiter (Luer) Luer, comb. nov.

Ety.: Named for the mythological *Jupiter* because of the great size of the flower.

Bas.: *Pleurothallis jupiter* Luer, Selbyana 1: 190, 1975.

Syn.: *Zosterophyllanthos jupiter* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, suberect, 10-35 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 1-2 other sheaths at the base. **Leaf** more or less spreading, thickly coriaceous, oblong-ovate, subacute to obtuse, shortly acuminate, 10-17 cm long, 2.5-4 cm wide, the base sessile, cordate to deeply cordate. **Inflorescence** a fascicle of successive, large, single flowers, subtended by a spathe 10-15 mm long; peduncles 2-4 mm long; floral bracts thin, tubular, 6-7 mm long; pedicels 20 mm long; ovary 7-8 mm long; **sepals** yellow-green, suffused with red-brown, the dorsal sepal narrowly ovate, acute, more or less acuminate above the middle, concave below the middle, carinate, 30-34 mm long, 12-16 mm wide expanded, 7- to 11-veined, the lateral sepals connate into a narrowly ovate, acute synsepal with revolute sides, 25-30 mm long, 9-10 mm wide expanded, 4-veined; **petals** greenish brown, ciliate-pubescent, oblong-falcate, decurved, obtuse, 10-12 mm long, 2.5-3 mm wide, 1-veined; **lip** greenish brown, thick, ovoid-subquadrate, obtuse-truncate, minutely verrucose with minutely fringed margins above the middle, 5-6 mm long, 5 mm wide, the sides decurved above the middle, the disc flat with a broad glenion above the base, the base subtruncate, thickened, broadly concave on the end, hinged to the bulbous base of the column-foot; **column** stout, 1 mm long, 1.5 mm wide, the foot thick, bulbous, the anther and stigma apical.

ECUADOR: **Cotopaxi**: terrestrial on road embankment above Pilalo, between Quevedo and Latacunga, alt. 3200 m, 5 Mar. 1975, *C. Luer & R. Kent 291* (Holotype: SEL); between Quevedo and Latacunga, alt. 2800-3200 m, 14 Feb. 1963, *C. Dodson & L. Thien 2258* (SEL); same area, above Pilalo, alt. 3200-3300 m, 8 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 3283* (AAU, S); same area, above Pilalo, alt. 3200 m, Dec. 1984, *A. Hirtz 2184* (MO), C. Luer illustr. 16634.
Bolívar: beween Guaranda and Caluma, alt. 2800 m, 11 May 1982, *C. Luer & S. Dalström 7250* (SEL).

This species is apparently endemic at a high altitude in a small area of the western slope of the Andes of central Ecuador. It is obviously closely allied to the equally large-flowered *Acronia grandiflora*, but from the latter *A. jupiter* is distinguished by more robust, thicker leaves; a narrower, multiveined dorsal sepal; broad, ciliate-pubescent petals; and a verrucose, fringed lip with the sides revolute above the middle, and with the apex curved up as seen in *A. deflexa*.

Acronia killipii (Garay) Luer, comb. nov.

Ety.: Named in honor of Ellsworth P. Killip who, with A.C. Smith, first collected this species.

Bas.: *Pleurothallis killipii* Garay, Canad. J. Bot. 34: 254, 1956.

Syn.: *Zosterophyllanthos killipii* (Garay) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium-sized, epiphytic, caespitose, more or less prolific; roots slender. Ramicauls slender, erect, 5-21 cm long, with a close tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, acuminate, 3-9.5 cm long, 1.5-3 cm wide, the base cordate, sessile. **Inflorescence** a fascicle of successive, resupinate, single flowers, subtended by a narrow, fugaceous spathe 5 mm long; peduncles 5-15 mm long; floral bracts tubular, 7-9 mm long; pedicels erect, 12-27 mm long; ovary 4 mm long; **sepals** light tan with veins brown, glabrous, the dorsal sepal ovate, acute, 17-19 mm long, 6.5 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute, acuminate, minutely bifid synsepal, 15-17 mm long, 6.5 mm wide, 4-veined; **petals** brown, narrowly linear-triangular, acute, attenuate, fimbriate, 15-17 mm long, 1 mm wide, 1-veined; **lip** purple, narrowly ovate, 8-10 mm long, 3.75 mm wide, the apex narrowly obtuse with an apiculum beneath, the disc coarsely echinate with a glenion at the base, the base acutely deflexed, concave on the end, hinged to the column-foot; **column** stout, terete, 2 mm long, the foot thick, obsolescent, the anther and stigma apical.

COLOMBIA: **Cundinamarca**: Los Gaques, Páramo de Guasca, alt. 3250 m, 12 Mar. 1939, *E.P. Killip 34061* (Holotype: US; Isotype: AMES); above Pacho, alt. 2200-2500 m, Feb. 1892, *F.C. Lehmann s.n.* (K-HK-82); Páramo de Guasca, 3 Nov. 1956, *M. Ospina & J.M. Idrobo 18* (AMES, COL); Páramo Boquerón de Chipaque, alt. 3300 m, 17 Nov. 1956, *M. Ospina & J.M. Idrobo 31* (AMES, COL); between Subachoque and La Pradera, alt. 3000 m, 24 Nov. 1956, *M. Ospina & J.M. Idrobo 49* (AMES, COL); Vertiente Oriental, between Uno and Fosca, alt. 3000-3200 m, 14 June 1974, *H. García-Barriga & R. Jaramillo 20528* (AMES, COL). **Santander**: Páramo Rico, alt. 3200 m, 15 Jan. 1927, *E.P. Killip & A.C. Smith 17832* (AMES); between Guaca and Santa Bárbara, alt. 2540, 6 Nov. 1981, *C. Luer & R. Escobar 6604* (SEL). **Boyacá**: Sierra Nevada de Cocuy, near Lobuga, alt. 2900 m, 16 Aug. 1957, *P.J. Grubb, B. Curry & A. Fernandez-Pérez 537* (K).

This species, relatively frequent in the Eastern Cordillera of Colombia, is easily recognized by the spreading ovate leaf that is often prolific, and a resupinate flower that is held erect above the surface of the leaf by the pedicel from a reclining peduncle. The petals are long, very narrow, and fimbriate. The narrowly ovate lip is coarsely echinate.

Acronia lacera (Luer) Luer, comb. nov.

Ety.: From the Latin *lacerus*, "lacerate," referring to the petals and lip.
Bas.: *Pleurothallis lacera* Luer, Selbyana 1: 248, 1975.

Syn.: *Zosterophyllanthos lacerus* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant small to medium in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 6-16 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** suberect to horizontal, thickly coriaceous, narrowly ovate, acute, 5-6 cm long, 0.8-1.1 cm wide, the base sessile, rounded to shallowly cordate. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, subtended by a spathe 5-7 mm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts thin, tubular, 3-4 mm long; pedicels 3-4 mm long; ovary 3-4 mm long; **sepals** dark purple, glabrous, the dorsal sepal broadly ovate, obtuse, concave, 5 mm long, 4 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse lamina, 5 mm long, 5 mm wide, 4-veined; **petals** dark purple, broadly elliptical, subacute, lacerate, 4 mm long, 3 mm wide, 1-veined; **lip** red, suborbicular, subcordate, obtuse, coarsely lacerate, 2 mm long, 1.5 mm wide, the disc convex with a pair of low, rounded calli, with a small glenion at the base, the base broadly concave on the end to accommodate the column-foot; **column** stout, 1 mm long, 2 mm wide, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: terrestrial on the road embankment below the pass on the new road between Quito and Santo Domingo, alt. 3200 m, 16 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 550* (Holotype: SEL).
COLOMBIA: **Nariño**: forest of Paisbamba above Popayán, alt. 2600 m, *F.C. Lehmann 6283* (K).

This species occurs at relatively high altitudes in southern Colombia and northern Ecuador. The narrow leaves are shallowly cordate to rounded at the sessile base. The flowers are non-resupinate and not widely expanded. The middle sepal and synsepal are dark purple, smooth and concave, while the petals and lip are broad and coarsely lacerate.

Acronia latipetala (Garay) Luer, comb. nov.

Ety.: From the Latin *latipetalus*, "wide-petaled," referring to the petals.
Bas.: *Pleurothallis latipetala* Garay, Orch. J. Calif. 1: 218, 1952.

Syn.: *Pleurothallis northenae* Luer, Amer. Orch. Soc. Bull. xx: 201, 1976.
Ety.: Named for Rebecca Northen who collected this species.
Syn.: *Zosterophyllanthos northenae* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-35 cm long, enclosed below the middle by a closely appressed, tubular sheath and 2-3 others at the base. **Leaf** spreading to deflexed, coriaceous, ovate, acute, 9-10.5 cm long, 5-6.5 cm wide, the base sessile, deeply cordate, with the basal lobes more or less overlapping. **Inflorescence** a fascicle of successive, single flowers, subtended by an erect, foliaceous spathe 25-30 mm long; peduncles 3-5 mm long; floral bracts tubular, 5-8 mm long; pedicels 11-15 mm long; ovary 5-6 mm long; **sepals** glabrous, the dorsal sepal dull red with darker red veins, elliptical-ovate, acute, 19-20 mm long, 8 mm wide, 7-veined, the lateral sepals yellow-green with dark red-purple veins, connate into a broadly ovate, concave, subsubacute synsepal, 16 mm long, 13 mm wide, 10-veined; **petals** translucent with dark red-purple veins, elliptical, acute, slightly acuminate, 8 mm long, 4.5 mm wide, 4-veined; **lip** white to light yellow, cordate-

triangular, subacute, 4 mm long, 4 mm wide, the disc featureless except for a glenion at the base, the base acutely deflexed, concave on the end, attached to the column-foot; **column** stout, 1.5 mm long, 3 mm broad, the foot thick, 2.5 mm long, the anther, rostellum and stigma apical.

COLOMBIA: **Cauca**: El Tambo, primary forest toward La Costa, alt. 800 m, Apr. 1937, *K. von Sneidern 1602* (Holotype: S; isotype: AMES). **Antioquia**: Urrao, El Llavero, alt. 1500 m, collected by M. Zapata, cultivated at Colomborquídeas, Feb. 1993, *R. Escobar 5110* (MO). **Valle del Cauca**: Huisitó, alt. 1500 m, cultivated by Amalia Lehmann de Sarria, 21 Oct. 1982, *C. Luer 8178* (SEL). Without collection data, obtained in Colombia in 1973 by Rebecca Northen, cultivated 22 July 1975, *C. Luer 031* (holotype of *P. northenae*: SEL).

This species is apparently rare and confined to southwestern Colombia at a moderately low altitude. It is characterized by the large, horizontal to deflexed, cordate leaf with a conspicuous, erect spathe from which the flower emerges. The sepals and petals are striped in purple brown while the whitish lip is triangular with an acutely deflexed base. The lip of the type of *Acronia latipetala* is misrepresented in the published description and figure (1952: 219) which led to the spurious publication of *A. northenae*.

Acronia lemniscifolia (Luer) Luer, comb. nov.

Ety.: From the Latin *lemniscifolius*, "leaf like a narrow ribbon," referring to the leaves.

Bas.: *Pleurothallis lemniscifolia* Luer, Selbyana 1: 250, 1975.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, more or less horizontal, 10-30 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sheaths at the base. **Leaf** pendent, thickly coriaceous, flexible, narrowly linear, acute, with sides revolute, 15-30 cm long, 0.8-1.1 cm wide, the base sessile, shallowly cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 10-17 mm long; peduncles 1-2 mm long; floral bracts thin, tubular, 5-7 mm long; pedicels 5-8 mm long; ovary 3-4 mm long; **sepals** yellow-brown with darker brown along veins, glabrous, the dorsal sepal elliptical, obtuse, 11 mm long, 6 mm wide, 5-veined, the lateral sepals connate into an ovate, obtuse synsepal, 10 mm long, 6 mm wide, 6-veined; **petals** brown, narrowly linear-oblong, subfalcate, obtuse, thick, denticulate-erose, 7.5 mm long, 0.5 mm wide, 1-veined; **lip** olive-brown with short, white pubescence, oblong, obtuse, with the sides revolute, 6 mm long, 3 mm wide, the disc slightly convex, with a glenion above the red-brown base, the base subtruncate, thickened, shortly deflexed, hinged to the column-foot; **column** stout, 1.5 mm long, 1.5 mm wide, the foot thick, obsolescent, the anther, rostellum and stigma apical.

ECUADOR: Pichincha: between Quito and Santo Domingo, alt. 1700 m, 17 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 589* (Holotype: SEL); between Chiriboga and Santo Domingo, alt. 1600 m, 3 Apr. 1986, *C.H. Dodson & D. D'Alessandro 16382* (MO).

This species, apparently endemic in northcentral Ecuador, is characterized by extraordinarily long and narrow, ribbon-like leaves that dangle from the ends of long, slender, wire-like ramicauls. Young leaves are straight, but older leaves often twist or curl. The flower is brown with obtuse dorsal sepal and synsepal; the petals are narrow and denticulate; and the oblong lip is covered with short, white hairs.

Acronia leucantha (Schltr.) Luer, comb. nov.

Ety.: From the Greek *leucanthos*, "white-flowered," referring to the color of the flower.

Bas.: *Pleurothallis leucantha* Schltr., Repert. Spec. Nov. Regni Veg. 10: 353, 1912.

Syn.: *Zosterophyllanthos leucanthus* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, or suberect, 3-9 cm long, with a close, tubular sheath on the lower half and another at the base. **Leaf** suberect or horizontal, coriaceous, narrowly elliptical-ovate, acute, 4-7 cm long, 1-1.5 cm wide, the base shallowly cordate, sessile. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, subtended by a spathe 5 mm long; peduncles ca. 2 mm long, concealed within the sheath; floral bracts thin, tubular, 3 mm long; pedicels 5 mm long; ovary 2 mm long; **sepals** yellow-white, glabrous, the middle sepal ovate, obtuse, slightly concave, 3.5-4 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, concave, obtuse synsepal, 3.5-4 mm long, 2.75-3 mm wide, 4-veined; **petals** light yellow, oblong, minutely denticulate, subacute, 2.5 mm long, 0.7 mm wide, 1-veined; **lip** yellow, thick, broadly cordate-ovate, obtuse, shortly apiculate, 2 mm long, 2 mm wide, minutely and diffusely verrucose, the sides erect, with the margins minutely denticulate, the disc concave with a shallow, central glenion, the base thick and deflexed or geniculate, hinged on the end to the base of the column; **column** stout, 1 mm long, the foot thick with the apex of the column, the anther, rostellum and bilobed stigma apical.

GUATEMALA: **Alta Verapaz**: epiphytic near Cobán, alt. 1350 m, May 1907, *H. von Türckheim II 2425* (Holotype presumably destroyed at B; Lectotype here designated: AMES 23645, illustr. of type). **Izabal**: Las Torres, alt. 950 m, 29 Oct. 1994, *M.W. Dix 9194* (MO), C. Luer illustr. 20426.

This species is uncommon in Guatemala. It is closely allied to *A. sanchoi* which occurs relatively frequently in Costa Rica and Panama, and uncommonly in Guatemala. *Acronia leucantha* is characterized by a narrowly ovate leaf, acute at the apex and shallowly cordate at the base, and a small, pale yellow flower. The middle sepal and synsepal are ovate and similar, at most four millimeters long. The petals are oblong, minutely denticulate, and two and a half millimeters long. The lip is thick, subarcuate, shallowly cordate, minutely verrucose, and with a shallow glenion. *Acronia sanchoi* differs in shorter, elliptical, subacute leaves, and a larger flower with the sepals about six millimeters long, and petals about five millimeters long. The lip is more deeply cordate, with a distinct glenion, and not verrucose.

Acronia lilijae (Foldats) Luer, comb. nov.

Ety.: Named in honor of Lilija, wife of Dr. Ernesto Foldats, who aided him in his studies.

Bas.: *Pleurothallis lilijae* Foldats, Acta. Bot. Venez. 3: 379, 1968.

Plant small, medium-sized to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a close, tubular sheath below the middle and 2-3 shorter sheaths at the base, 8-30 cm long. **Leaf** spreading, horizontal to acutely deflexed, coriaceous, ovate to narrowly ovate, 6-15 cm long, 2-4 cm wide, the apex acute, the base more or less concave, sessile, deeply cordate with the lobes often incurved. **Inflorescence** a fascicle of solitary, successive flowers borne from a prone, suberect to erect spathe, 5-13 mm long, 3-5 mm broad, at the base of the leaf; peduncles 1-2 mm long, confined within the spathe; floral bracts 4-8 mm long; pedicels 5-12 mm long; ovary 5-8 mm long, cellular-glandular; flowers resupinate, variously mottled and suffused with purple or brown on yellowish; **sepals** cellular-glandular to cellular-papillose, the dorsal sepal broadly ovate to suborbicular, obtuse to rounded, sometimes shortly acuminate, 7-13 mm long, 7-10 mm wide, 5- to 7-veined, the lateral sepals connate into an ovate to oblong, subacute to obtuse synsepal, 8-12 mm long, 3.5-5 mm wide, 4- to 6-veined, with the sides recurved; **petals** widely expanded, ovate-spathulate, acute, unguiculate, 7-12 mm long, 3-4.5 mm wide, 3-veined, occasionally 1-veined with a vestigial vein, glabrous or pubescent with ciliate-denticulate margins; **lip** erect, protruding triangular-ovate, thick, 3-6 mm long, 3-4.5 mm wide, more or less cellular-glandular, the apex obtuse, the basal angles subacute to obtuse, the disc superficially channeled above the middle, shallowly bicallous at the base, the base flattened on the end, firmly hinged to the column-foot; **column** stout, 1-1.5 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

Representative collections:

VENEZUELA: **Mérida**: below Paramó de Tamá, near Colombian border, alt. 2750-2950 m, 20-23 May 1967, *J.A. Steyermark, G.C.K. & E. Dunsterville 98549* (Holotype: VEN; Isotype: AMES); above Quebrada Las Copas at the base of Pata de Judio, alt. 2600 m, *J.A. Steyermark, G.C.K. & E. Dunsterville 100873* (VEN).

COLOMBIA: **Norte de Santander**: between Cucutilla and Pamplona, alt. 2800 m, 13 Nov. 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6693* (SEL).

Santander: between Bucaramanga and Berlin, alt. 2800 m, 27 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7592* (SEL). **Putumayo**: east of San Francisco, alt. 2350 m, 27 Jan. 1987, *C. Luer, J. Luer et al. 12540* (MO).

ECUADOR: **Carchi**: above Maldonado, alt. 1800-2000 m, June 1977, collected by W. Teague, cultivated in San Francisco, 12 Dec. 1978, *C. Luer 3633* (SEL). **Sucumbíos**: between El Carmelo and La Bonita, alt. 2200 m, Aug. 1990, *A. Hirtz et al. 4971* (MO). **Pichincha**: west of Calacalí, alt. 2550, 4 Apr. 1885, *C. Luer et al. 11050* (MO). **Napo**: along Río Upano north of Macas, alt. 1050 m, 15 Jan. 1989, *C. Luer, J. Luer, A. Jesup, P. Jesup, A. Hirtz & S. Ortega 13902, 13918* (MO). **Morona-Santiago**: east of the pass between Gualaceo and Limón, alt. 2400 m, 29 Oct. 1982, *C. Luer, R. Escobar & A. Pozo 8223* (MO). **Cañar**: above Rivera, road to Pindilig, alt. 2800 m, 9 Mar. 1985, *G. Harling & L. Andersson 23007* (GB). **Azuay**: between Sigsig and Gualaquiza, alt. 2800-3000 m, 11 Apr. 1968, *G. Harling, G. Storm & B. Ström 8232* (GB); between Jarata and La Paz, road to Loja, alt. 3400 m, 6 Mar. 1985, *G. Harling & L. Andersson 22817* (GB). **Loja**: Nudo de Sabanilla, alt. 2600 m, 9 Nov. 1982, *G. Harling et al. 20495* (GB). **Zamora-Chinchipe**: Cajanuma Range south of Loja, alt. 2750 m, 21 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10741* (MO); Cordillera del Condor, east of Los Encuentros, alt. 1300 m, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13474* (MO).

BOLIVIA: **La Paz**: Sud Yungas, along Río Unduavi, alt. 2450 m, 6 Feb. 1980, *C. Luer, J. Luer, R. Vásquez & M. Manon 5148* (SEL).

This species is relatively frequent and variable in its wide distribution through the Andes at relatively low altitudes usually below 2000 meters above sea level from Venezuala into Bolivia. It was described from a collection by Steyermark in the western mountains of Venezuela.

Similar to *Acronia cardiostola*, this species varies greatly both vegetatively and florally. The juvenile leaves are erect, elliptical, acute and not cordate at the base as seen in related species. Most often the cordate, mature leaves are acutely deflexed on the ramicaul with the cordate, basal lobes more or less erect and incurved. The leaves are generally longer and narrower than those of *A. cardiostola*, usually curving upward beyond the middle.

The resupinate flowers emerge from a reclining to a more or less erect, conspicuous spathe. Most commonly the flowers are mottled and suffused with purple or brown. The sepals are variably cellular-glandular to short-pubescent. The synsepal with longitudinally revolute sides is usually considerably narrower than the dorsal sepal. The spathulate petals are usually pubescent and widely expanded. The thick, oblong-ovate lip protrudes erect from beneath the column. The disc is shallowly cleft above the middle.

Acronia linguifera (Lindl.) Luer, comb. nov.

Ety.: From the Latin *linguifer*, "tongue-bearing," referring to the labellum.
Bas.: *Pleurothallis linguifera* Lindl., Folia Orch. *Pleurothallis* 10, 1859.

Syn.: *Pleurothallis boliviana* Schltr., Repert. Spec. Nov. Regni Veg. 10: 453, 1912, not Rchb.f. 1855.
Ety.: Named for Bolivia, the country of origin of the plant described.

Syn.: *Pleurothallis buchtienii* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 66, 1922, nom. nov.
Ety.: Named in honor of Otto Buchtien who collected in Bolivia.

Syn.: *Zosterophyllanthos linguifer* (Lindl.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls erect, slender to stout, 20-50 cm long, with a tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** suberect to spreading, coriaceous, cordate-ovate, acute, 10-18 cm long, 3-5.5 cm wide, the base sessile, deeply cordate, with the lobes sometimes overlapping. **Inflorescence** a single, successive flower, from a reclining spathe 1-2 cm long; peduncles 5-10 mm long; floral bracts 5-12 mm long; pedicel 15-20 mm long; ovary 6-10 mm long; flowers **sepals** minutely pubescent within, the dorsal sepal yellow to orange, elliptical-ovate, acute, 16-27 mm long, 8-13 mm wide, 5- to 7-veined, the lateral sepals yellow, brown or purple, connate into an ovate, acute synsepal 15-27 mm long, 7-12 mm wide, 4-, 6-, or 8-veined; **petals** red-purple, deflexed, narrowly oblong, acute, minutely denticulate, 10-16 mm long, 1.5-2 mm wide, 1-veined; **lip** erect, red-purple, glabrous to cellular-glandular, oblong, subacute, with decurved sides with minutely denticulate margins, 10-14 mm long, 4-6 mm wide unexpanded, the base with a small glenion, truncate, flattened to concave on the end, hinged to the column-foot; **column** stout, 2.5 mm long, 3 mm broad, the anther and bilobed stigma apical, the foot thick, 2-3 mm long.

Pleurothallis linguifera - adonis complex:
BOLIVIA: **La Paz**: without locality, 1846, *Bridges s.n.* (Holotype: K); Sud Yungas, Unduavi, auf Felsen bei San Filipe, alt. 2600 m, Nov. 1910, *O. Buchtien 2621* (holotype of *P. boliviana* destroyed at B; lectotype US; isolectotype: AMES 26527; Nor Yungas, west of Coroico, alt. 2450 m, 4 Feb. 1980, *C. Luer, J. Luer & R. Vásquez 5098* (SEL); above Río Unduavi, alt. 3050 m, 24 Nov. 1992, *C. Luer et al. 16487* (MO); Sud Yungas, east of Unduavi, alt. 3100 m, 22 Jan. 1984, *C. Luer, J. Luer & R. Vásquez 9443* (SEL). Saaveda, below Charazani, alt. 2550 m, 19 Nov. 1992, *C. Luer, J. Luer et al. 16445* (MO). **Cochabamba**: Charasco, below Monte Puncu, Río Lope Mendoza, alt. 2500 m, 1 Feb. 1981, *C. Luer, J. Luer & R. Vásquez 5812* (SEL).
PERU: **Amazonas**: Condorcanqui, Cordillera del Condor, cabeceras del Río Comainas, alt. 1500-1800 m, 16 July 1994, *H. Beltran & R. Foster 888, 891* (SEL, USM); near Pomacochas, alt. 7,000 ft., collected by K. Tokach P-52, cultivated in Tacoma, WA, Oct. 1996, *C. Luer 18091* (MO). **Cajamarca**: Cutervo: between San Andrés and Sócota, alt. 2500 m, 19 Apr. 1988, *C. Diaz & S. Baldeón 2827* (MO). **Huánuco**: Huánuco, terrestrial, *D.E. Bennett 2800* (SEL).
ECUADOR: **Carchi**: between Tulcán and Maldonado, alt. 3150-3250 m, 19 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 5807* (AAU). **Sucumbíos**: between El Carmelo and La Bonita, alt. 2600 m, Aug. 1990, *A. Hirtz, X. Hirtz, J. del Hierro & F. Sarmiento 4986* (MO); above San Gabriel, alt. 3380 m, 16 Mar. 1981, *C. Luer, J. Luer & A. Hirtz 6257* (SEL). **Pichincha**: below Calacalí, alt. 3000

m, 28 Nov. 1880, *F.C. Lehmann 191* (W); old road to Santo Domingo, near Chiriboga, alt. 1600 m, 26 July 1967, *C.H. Dodson, N.H. Williams & R. Adams 3832* (SEL). **Cotopaxi**: between Quevedo and Latacunga, alt. 3200 m, 8 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 3285* (AAU, AMES). **Napo**: between Papallacta and Cuyuja, alt. 2500 m, June 1989, *A. Hirtz & X. Hirtz 4257* (MO).

Morona-Santiago: west of Macas along the new road to Guamote, alt. 2300 m, 2 Mar. 2001, *C. Luer, J. Luer & A. Hirtz 19608, 19623* (MO); east of the pass between Gualaceo and Limón, alt. 2800 m, *C. Luer & J. Luer 6128* (SEL). **Loja**: south of Yangana, north of the pass, alt. 2400 m, 3 Mar. 1982, *C. Luer et al. 7101* (SEL); upriver from Vilcabamba, alt. 2000-2400 m, May 1985, *D. D'Alessandro 356* (MO); Jimbura, alt. 3200 m, 1 Feb. 2003, *A. Hirtz et al. 8482* (MO). **Zamora-Chinchipe**: terrestrial on road-cut east of the pass between Loja and Zamora, alt. 2000 m, 5 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 454* (holotype of *A. adonis*: SEL); south of Yangana, above Valladolid, alt. 2450 m, *C. Luer et al. 9581* (MO); south of the pass between Jimbura and Zumba, alt. 2800 m, 24 Jan. 1986, *S. Dalström & T. Höijer 1093* (MO); Quebrada Río San Francisco, alt. 2050-2250 m, 23 June 1988, *B. Øllgaard 74961* (AAU, QCA); Cordillera del Condor, north of Nambija, alt. 1400 m, June 1991, *A. Hirtz 5515* (MO).

COLOMBIA: **Norte de Santander**: Alto de San Francisco above Villacaro, alt. 2750 m, 6 May 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7747* (SEL); Páramo de Jurisdicciones, alt. 2300 m, 30 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7682* (SEL). **Boyacá**: between Arcabuco and Moniquirá, alt. 2500 m, 25 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7561* (SEL). **Cundinamarca**: terrestrial, La Selva at Facatativa, alt. 9,000 ft., Apr. 1918, *Mr. Tracy 242* (K); above Gutierrez. alt. 2700 m, 19 May 1984, *C. Luer, J. Luer & R. Escobar 10367* (MO). **Antioquia**: Yarumal, cultivated at Colomborquídeas, 23 May 1995, *C. Luer 17599* (MO); Urrao, Guangarales, alt. 1700 m, collected by M. Zapata, cultivated at Colomborquideas, 5 May 1993, *C. Luer 16699* (MO); La Ceja, Río Piedras, alt. 2000 m, collected by D. Arbelaez, cultivated at Colomborquídeas, Dec. 1992, *R. Escobar 5196* (MO); Medellín, Cerro Padre Amaya, alt. 2600 m, collected by E. Acevedo, cultivated at Colomborquídeas, 27 Mar. 1997, *R. Escobar 8309* (MO). **Nariño**: between Pasto and Tumaco, alt. 1820 m, 21 July 1989, *C.H. Dodson, R. Escobar & E. Valencia *18042* (MO).

This taxon is treated here as a species-complex including *Acronia adonis* and *A. linguifera*. Although much material can be identified as one or the other, many collections defy the definitions, and present features that belong to the other. Therefore, most collections are listed together.

Pleurothallis linguifera was described by Lindley from a collection by Bridges in Bolivia, no doubt inferred from the department of La Paz. It is widely distributed through the Andes from Colombia into Bolivia. A closely related taxon, *Acronia adonis*, was described from Ecuador. The latter is distinguished by a three-veined dorsal sepal as opposed to five or seven veins in the dorsal sepal of *A. linguifera*. The sides of the lip of *A. adonis* are usually more revolute. The distributions of the two taxa with their intermediates overlap, making identification of many uncertain, although the majority can be identified as one or the other.

Vegetatively indistinguishable, the leaves are variable, from narrowly to broadly elliptical or ovate, acuminate to obtuse, and with the base deeply to shallowly cordate. Usually, a single flower is present, but three or four often occur simultaneously in *Acronia adonis*. The dorsal sepal is concave, and the petals are narrowly oblong and variously denticulate, erose, or ciliate. The lip is large, oblong, and convex with the sides decurved, more revolute in *A. adonis*, occasionally so incurved that the margins meet beneath to form a tube.

Acronia llanganatensis Luer & Hirtz, sp. nov.

Ety.: Named for the Cordillera de Llanganates in eastcentral Ecuador, where the species was collected.

Species haec *Acroniae nephroglossae* (Schltr.) Luer similis, sed sepalis proportione latioribus, petalis duplo latioribus et labello non-papillosis transverse reniformi basi late concavo differt.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, suberect, 20-25 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, thickly coriaceous, narrowly ovate, acute, acuminate, 15-19 cm long, 4-5 cm wide, the base sessile, cordate. **Inflorescence** a single flower, subtended by a reclining spathe 2.5 cm long; peduncles ca. 10 mm long; floral bracts loose, 6 mm long; pedicels 8 mm long; ovary 10 mm long; flowers dark purple, **sepals** fleshy, cellular externally and internally, the dorsal sepal cucullate, broadly ovate, obtuse, 20 mm long,

18 mm wide unexpanded, 11-veined, the lateral sepals connate into an ovate, narrowly obtuse synsepal, 21 mm long, 12 mm wide, 6-veined; **petals** fleshy, oblong, convex, round at the apex, microscopically subverrucose, 11 mm long, 6.5 mm wide; **lip** glabrous, microscopically subverrucose, transversely reniform, 6 mm long, 9.5 mm wide, the apex broadly rounded with the sides decurved on either side, the disc convex, the base broadly truncate with a broad glenion, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Pastaza**: Cordillera de Llanganates, alt. 3100 m, 11 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11171* (Holotype: MO).

This large species, similar to the relatively frequent *Acronia nephroglossa*, is apparently rare on the eastern slopes of the Andes of central Ecuador. It is distinguished by slightly smaller, dark purple flowers with a proportionately wider, cucullate dorsal sepal. The petals are broader, convex and glabrous to the naked eye. The lip is transversely reniform, essentially smooth and devoid of papillae, with a truncate, non-cordate base. The species is most similar to the new species *Acronia suinii*, also from southern Ecuador, but differing in the transversely reniform lip with decurved sides.

Acronia loreae (Carnevali & I. Ramírez) Luer, comb. nov.

Ety.: Named for F. Lorea H., curator of the herbarium of the Instituto de Ecología, Xalapa, Mexico, co-collector of this species.

Bas.: *Pleurothallis loreae* Carnevali & I. Ramírez, Novon 13: 412, 2003.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 11-19 cm long, with a close, tubular sheath below the middle and 1-2 others at the base. **Leaf** horizontal, coriaceous, ovate, acute, acuminate, 6-7 cm long, 3-4 cm wide, the base deeply cordate, sessile. **Inflorescence** a solitary flower produced successively from a reclining spathe ca. 5 mm long, at the base of the leaf; peduncles ca. 2 mm long; floral bract 4-5 mm long; pedicel 2 mm long; ovary 2.5 mm long; **sepals** purple, fleshy, glabrous, the dorsal sepal ovate, obtuse, concave, 6.5 mm long expanded, 5 mm wide expanded, 3-veined, the lateral sepals connate into a concave, broadly ovate-cordate, obtuse synsepal, 6 mm long, 6.5 mm wide, 6-veined; **petals** oblong-triangular, oblique, acute, concave, 3.5 mm long expanded, 1.5 mm wide; **lip** thick, ovoid, obtuse, deeply concave with thick margins, 2 mm long, 1.3 mm wide, the base broadly truncate, concave on the end, attached to the base of the column; **column** stout, 1 mm long, 1 mm wide, with a broad, thick base.

VENEZUELA: **Falcón**: Sierra de San Luis, Zambrano-Curimagua road, alt. 1300-1500 m, 9 Aug. 1993, *G. Carnevali, F. Lorea, et al. 3263* (Holotype: VEN; Isotype: CICY), C. Luer illustr. 17007.

This species is apparently endemic in coastal Venezuela. It is distinguished by a deeply cordate leaf; a small, successive, fleshy flower with concave dorsal sepal and synsepal; acute, concave petals; and a deeply concave, entire lip with thick margins.

Acronia lunaris (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *lunaris*, "moon-like," in allusion to the large, rounded, pale orange flowers.

Bas.: *Pleurothallis lunaris* Luer & R.Escobar, Orquideología 14: 158, 1981.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 30-45 cm long, with a long, close, tubular sheath below the middle and 1-2 others at the base. **Leaf** horizontal to deflexed, coriaceous, undulate, narrowly ovate, acute, 12-21 cm long, 4.5-7.5 cm wide, the base deeply cordate, sessile. **Inflorescence** a large, solitary, widely spread, peach-colored flower produced successively in a fascicle from a spathe 15-22 mm long, at the base of the leaf; peduncles 1 cm long; floral bract 5-8 mm long; pedicel 8-10 mm long; ovary 7-8 mm long; **sepals** glabrous, the dorsal sepal broadly elliptical to suborbicular, obtuse, 23 mm long, 18 mm wide, 9-veined, the lateral sepals connate into a shallowly concave, broadly ovate-cordate synsepal, 18 mm long, 20 mm wide, with the apex rounded, light green toward the center; **petals** oblong, oblique, subacute, 12 mm long, 5 mm wide; **lip** flat, suborbicular, 6.5 mm long, 6 mm wide, the base yellow, deflexed, shallowly concave, the disc with a small glenion above the base; **column** greenish white, stout, 1.5 mm long, 3.5 mm wide, with a broad, thick foot.

COLOMBIA: **Antioquia**: Munic. of Yarumal, headwaters of Río Espiritu Santo, alt. 2500 m, collected by O.J. Arango & G. Misas, Feb. 1974, cultivated by M. & O. Robledo at La Ceja, *R. Escobar 1156* (Holotype: JAUM); same collection, cultivated 17 Oct. 1977, *C. Luer 2080* (Clonotype: SEL). Without locality, collected by J. Aguirre, cultivated at Colomborquídeas, 20 Apr. 1997, *R. Escobar 8321* (MO). .

This handsome species is distinguished from its numerous relatives by the large, narrowly ovate, undulating leaves; a large, peach-colored flower with a rounded dorsal sepal; a rounded synsepal; and a rounded lip.

Acronia lutheri Luer & Endara, sp. nov.

Ety.: Named for Harry Luther of bromeliad fame, who collected this species.

Species haec *Acronia imperialis* (Luer) Luer affinis, sed foliis majoribus, pedicelis elongatis, petalis innen spiculatis, et labello supra medium transverse rugoso ad apicem involuto acuto differt.

Plant large, epiphytic, presumably caespitose; roots unknown. Ramicauls stout, erect, 50 cm or more tall, with a close tubular sheath below the middle. **Leaf** spreading, coriaceous, ovate, acute, slightly acuminate, 32 cm long, 15 cm wide, the base sessile, shallowly cordate. **Inflorescence** a fascicle of single, successive flowers borne on top of the leaf from a spathe ca. 1 cm long; peduncles 1.5-2 cm long; floral bract 7-10 mm long; pedicel 4-5 cm long; ovary 10-13 mm long; **sepals** glabrous externally, purple-brown, the dorsal sepal broadly ovate, concave, subacute to obtuse, 25 mm long, 20 mm wide, multiveined, the lateral sepals connate into an ovate, subacute synsepal, spiculate-pubescent within above the middle, 25 mm long, 15 mm wide, multiveined; **petals** purple-brown, glabrous except for spiculate medial third, oblong, convex, subfalcate, round at the apex, 13 mm long, 7.5 mm wide, 7-veined, with the medial margins in apposition; **lip** dark purple-brown, glabrous, suborbicular, 5-6 mm long, 6 mm wide, broadly convex, pouch-like, transversely rugose above the middle with margins and the acute tip involute, the disc with a large glenion at the base, the base subtruncate, concave on the end, hinged on the edge to the column-foot; **column** stout, semiterete, 2 mm long, 3 mm wide, the anther and bilobed stigma apical.

ECUADOR: **Pichincha**: in wet forest near "Tinalandia," alt. 900 m, 18 Feb. 1988, *H. Luther, J. Kress & Roesel 1209A* (Holotype: SEL), C. Luer illustr. 20455.

This species is closely allied to *Acronia imperialis* with which it grows sympatrically on the eastern slope of the Andes near Santo Domingo de Los Colorados. *Acronia lutheri* is distinguished by a large, spreading, ovate leaf that is acute at the apex and shallowly cordate at the base; several large, simultaneous, purple-brown flowers that are born by elongate pedicels four or five centimeters long. The sepals are obtuse and multiveined; the petals are broad, convex, with the medial thirds spiculate and in apposition beneath the lip. The lip is suborbicular with the deeply convex apex transversely rugose, involute, and pointed.

Acronia macra (Lindl.) Luer, comb. nov.

Ety.: From the Greek *macros*, "large" or "long," probably in reference to the habit.

Bas.: *Pleurothallis macra* Lindl., Folia Orch. *Pleurothallis* 10, 1859.

Syn.: *Pleurothallis filifera* Lindl., Folia Orch. *Pleurothallis* 20, 1859.

Ety.: From the Latin *filifer*, "filiform," referring to the petals.

Syn.: *Humboldtia filifera* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Humboldtia macra* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Zosterophyllanthos macrus* (Lindl.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 10-35 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 7-13 cm long, 1.3-2 cm wide, the base sessile, shallowly cordate. **Inflorescence** a fascicle of successive, long-pedicellate, drooping, single flowers, subtended by a spathe 10-13 mm long; peduncles 1-2 mm long; floral bracts thin, tubular, 8-10 mm long; pedicels 15-25 mm long; ovary 5 mm long; **sepals** yellow-green, variously flecked or suffused with red or purple, glabrous, the dorsal sepal broadly ovate or suborbicular, obtuse, 11-14 mm long, 8-10 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 10-13 mm long, 5-6 mm wide, 4-veined; **petals** red-brown, linear-falcate, acute, decurved, minutely erose, 9-12 mm long, 1-1.5 mm wide, 1-veined; **lip** red-brown, minutely verrucose, ovate-oblong, 4-5 mm long, 3-3.5 mm wide, obtuse to rounded at the apex with a conical callus beneath, the disc shallowly channeled, the base truncate with a glenion, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: without locality, *W. Jameson s.n.* (Holotype: K); Valley of Lloa, alt. 9,000 ft., *W. Jameson s.n.* (holotype of *P. filifera*: K); near Calacalí, alt. 3000 m, 28 Nov. 1879, *F.C. Lehmann 390* (W); near Calacalí, alt. 3000 m, 28 Nov. 1880, *F.C. Lehmann 191* (W); rocky cliffs between Quito and Chiriboga, alt. 2400-2800 m, 14 Mar. 1963, *C.H. Dodson 2394* (SEL), C. Luer illustr. 161; between Saloya and Chiriboga, alt. 2900 m, 18 June 1968, *G. Harling, G. Storm & B. Ström 10443* (GB); between San Juan and Chiriboga, alt. 2900 m, 20 Mar. 1979, *B. Lojtnant & U. Molau 11249* (AAU, GB); Cerro Pichincha, between Quito and San Juan, alt. 2500-3000 m, 15 June 1983, *J. Bohlin & M, Bohlin 474* (GB). **Cotopaxi**: between Quevado and Latacunga, alt. 2200 m, 8 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 3206* (AAU). **Tungurahua**: slopes of Tungurahua above Baños, alt. 8,000 ft., 17 July 1878, *F.C. Lehmann s.n.* (W).

This species is relatively frequent in the mountains of central Ecuador where it is apparently endemic. It is characterized by the tall, slender ramicauls with erect, narrowly ovate leaves. The flowers hang with slender pedicels beyond the shallowly cordate base. The dorsal sepal is large and suborbicular, considerably wider than the synsepal; the petals are narrowly falcate and decurved; and the lip is ovate and obtuse.

Acronia macrocardia (Rchb.f.) Luer, comb. nov.

Ety.: From the Greek *makrokardia*, "a big heart," referring to the large, cordate leaves and large labellum.

Bas.: *Pleurothallis macrocardia* Rchb.f., Bonplandia 3: 72, 1855.

Syn.: *Pleurothallis pulvinipes* Schltr., Notizbl. Bot. Gart. Berlin 7: 529, 1921.

Ety.: From the Latin *pulvinipes*, "a cushioned foot," referring to the bulbous column-foot.

Syn.: *Zosterophyllanthos pulvinipes* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 15-55 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, subacute, acuminate, 8-15 cm long, 5-7 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, successive, flowers, borne on top of the leaf, subtended by a reclining spathe 1-1.5 cm long; peduncle 3-5 mm long within spathe; floral bracts tubular, 7-9 mm long; pedicels 10-12 mm long; ovary 6 mm long; **sepals** dark yellow to purple, microscopically cellular and ciliate, the dorsal sepal elliptical, subacute, shallowly concave, 13-20 mm long, 7-12 mm wide, 5- to 7-veined, the lateral sepals connate into an ovate, subacute synsepal, 13-18 mm long, 7-10 mm wide, 6-veined; **petals** linear-oblong, acute, minutely denticulate and pubescent, 10-15 mm long, 1.5 mm wide, 1-veined; **lip** oblong-ovate, obtuse, 11-14 mm long, 5-6.5 mm wide, minutely denticulate, slightly convex, cellular papillose, the base truncate, with a cavity on the end, articulated to the column-foot; **column** stout, 2.5 mm long, 2-3 mm wide, the foot thick with the anther, rostellum and stigma apical.

COLOMBIA: **Norte de Santander**: Ocaña, near San Pedro, alt. 5,000 ft., *H. Wagener s.n.* (Holotype: W). **Cundinamarca**: between Bogotá and Fusagasuga, alt. ca. 1770 m, *R. Schnitter s.n.* (holotype of *P. pulvinipes*: presumed to be at S); without locality, purchased from a vendor in Bogotá, Oct. 1992, cultivated at Colomborquídeas, 26 Mar. 1997, *R. Escobar 8280* (MO), C. Luer illustr. 18538.
ECUADOR: **Carchi**: epiphytic in scrub forest between Maldonado and Tulcán, alt. 3200 m, 17 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 5661* (AAU), C. Luer illustr. 17214.
BOLIVIA: **Cochabamba**: Carrasco, Sehuencas, along Río Lupe Mendoza, alt. 2630 m, 23 Jan. 1988, *C. Luer, J. Luer, R. Vásquez et al. 12803* (MO).

Collections answering this description are found in a wide distribution through the Andes from Colombia to Bolivia. Although somewhat variable, this concept is distinguished by the large habit with ovate, acuminate, deeply cordate leaves. The flower is large with the dorsal sepal usually more than 13 millimeters long and five- to seven-veined. The petals are narrowly oblong, minutely pubescent and minutely denticulate. The lip is proportionately large, ovate, convex, cellular papillose with minutely fringed margins. It nearly fills the space as it lies atop the synsepal. It is distinguished from *Acronia cardiophylax* by a five- to seven-veined dorsal sepal, and minutely pubescent and denticulate petals.

Acronia maduroi (Luer) Luer, comb. nov.

Ety.: Named in honor of Andres Maduro of Panama, Panama, who discovered this species.
Bas.: *Pleurothallis maduroi* Luer, Lindleyana 12: 51, 1997.

Plant large, presumably caespitose. Ramicaul broken off above the base, erect?, more than 20 cm long, with a tubular sheath near the middle. **Leaf** spreading? or pendent?, coriaceous, ovate, acute, 13 cm long, 7 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, large, red flower borne on top of the leaf from a reclining spathe 2.5 cm long; peduncle ca. 10 mm long within the spathe; floral bract 8-10 mm long; pedicel 15 mm long; ovary 15 mm long, arcuate 180°; **sepals** glabrous, the dorsal sepal ovate, obtuse, concave, 30 mm long, 20 mm wide unexpanded, 16- to 18-veined, the lateral sepals completely connate into an ovate, acute synsepal, 27 mm long, 15 mm wide, 10- to 12-veined, concave basally beneath the column; **petals** decurved, entire, oblong, obtuse, 11 mm long, 5 mm wide, 5-veined; **lip** glabrous, transversely ovate, broadly obtuse, trilobed, 6 mm long, 9 mm wide, the lobes below the middle, erect, rounded, the disc with 4 prominent veins and a glenion at the base, transversely flat on the end without deflexion, hinged to the column-foot; **column** stout, terete, 1.5 mm long, 2.5 mm wide, the anther and entire stigma apical.

PANAMA: **Chiriquí**: Guadalupe, May 1992, *A. Maduro 18* (Holotype: MO).

This large-flowered species was collected by Andres Maduro in the mountains of westernmost Panama. The position of the flower at the base of the large, ovate leaf is unusual with the long ovary curved 180°. If the leaf is pendent, the flower is resupinate; if the leaf is horizontal, the flower is reclining with the synsepal uppermost and erect. The dorsal sepal is broadly ovate and concave with 16 or 18 veins. The ovate synsepal is concave basally beneath the lip; the petals are broad with five veins; and the lip is transversely trilobed with the apex broadly rounded and the lateral lobed rounded and erect.

Acronia magnipetala (C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin *magnipetalus*, "with large petals," referring to the size of the petals.
Bas.: *Pleurothallis magnipetala* C.Schweinf., Bot. Mus. Leafl. 15: 97, 1951.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-11 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, 3-5 cm long, 1.2-2.2 cm wide, the base sessile, cordate. **Inflorescence** a successive, single flower, borne on top of the leaf, subtended by a reclining spathe 5-6 mm long; peduncle 2-3 mm long within spathe; floral bract tubular, 5 mm long; pedicel 3 mm long; ovary 3 mm long; **sepals** yellow-orange, glabrous, the dorsal sepal elliptical-ovate, acute, shallowly concave, 4.5-5 mm long, 2 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 4 mm long, 2.75-3 mm wide, 2-veined; **petals** membranous, glabrous, elliptical, subacute, 3.75 mm long, 1-1.4 mm wide, 1-veined; **lip** thick, ovate-triangular, obtuse, 2.5 mm long, 1.4 mm wide, the disc shallowly concave, the base broadly truncate, with a shallow cavity on the end, hinged to the abbreviated column-foot; **column** stout, 1 mm long and wide, the foot thick, with the anther, rostellum and stigma apical.

PERU: **Cuzco**: Quispichanchis, Hda. Tlis Marcapata, alt. 2000 m, 27 Jan. 1943, *C. Vargas 3128* (Holotype: AMES; Isotype: CUZ), C. Luer illustr. 19088; Quispichanchis, Yanamayo, alt. 720 m, 24-25 June 1966, *C. Vargas 17495* (AMES, CUZ); Quispichanchis, Cadena, alt. 1020 m, 29-30 July 1946, *C. Vargas 6221* (AMES, CUZ); Paucartambo, alt. 1350 m, 6 Dec. 1947, *C. Vargas 6784* (AMES, CUZ); Paucartambo, Pilcopta, Atalaya, alt. 650 m, 15 Jan. 1987, *A. Núñez 6864* (MO, SEL).

Schweinfurth first considered naming this little species "reflexifolia" under which it resides in the type collection at AMES. Apparently endemic in the mountains of southeastern Peru, it is superficially similar to the ubiquitous *Acronia phyllocardioides*. Vegetatively indistinguishable, the sepals are basically similar, but the petals are entire and proportionately larger. The lip is distinctly different, being larger, thick and subtriangular with the disc shallowly concave.

Acronia marthae (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named in honor of Sra. Martha Posada de Robledo of Medellín, Colombia, who has cultivated this species.

Bas.: *Pleurothallis marthae* Luer & R.Escobar, Orquideología 20: 68, 1996.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 15-70 cm long, with a tubular sheath below the middle and 2-3 others at the base. **Leaf** spreading, coriaceous, broadly cordate-ovate, obtuse, shortly acuminate, 15-25 cm long, 10-21 cm wide, the base deeply cordate, sessile. **Inflorescence** a few-flowered fascicle of solitary, showy flowers borne by peduncles 1-1.5 cm long, from a spathe 1-2 cm long, at the base of the leaf; floral bracts tubular, 10-15 mm long; pedicels 10-15 mm long; ovary 9-10 mm long; **sepals** rose, the dorsal sepal broadly ovate, obtuse, concave, 18 mm long, 13 mm wide, 15-veined, the lateral sepals completely connate into a broadly cordate-ovate, obtuse synsepal, 16 mm long, 14 mm wide, 14-veined, glabrous externally, minutely papillose within; **petals** rose, obovate, oblique, rounded at the apex, convex, 11 mm long, 7.5 mm wide, papillose on the outer half, densely spiculate on the inner half; **lip** light rose, thick, convex, transversely obovate, 5 mm long, 7 mm wide, the apex transverse, minutely apiculate, deflexed, the disc transversely rugose-verrucose on the convex surface above the middle, smooth below the middle, the base broadly truncate, acutely reflexed, hinged to the base of the column-foot; **column** stout, 1 mm long, 3 mm broad, the foot thick, 2 mm long, the anther, rostellum and stigma apical.

COLOMBIA: **Valle del Cauca**: Garrapatas, collected by E. Valencia, cultivated at Colomborquídeas, 6 May 1993, *C. Luer 16689* (Holotype: JAUM; Isotype: MO); cult. by M. & O. Robledo at La Ceja, 9 Apr. 1988, *C. Luer 13110* (MO).

This huge species, apparently endemic in southern Colombia, is distinguished by the broad, deeply cordate leaves, and a few-flowered fascicle of relatively large, showy, gaping, rose-colored flowers. The flowers are distinguished by the broad, spiculate petals with rounded apices, and a transverse, convex, rugose-verrucose lip. It is most closely related to *Acronia imperialis* (Luer) Luer in which the petals and lip are smooth.

Acronia mastodon (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *mastodon*, "a mastodon," referring to the tusk-like petals.

Bas.: *Pleurothallis mastodon* Luer & Hirtz, Lindleyana 11: 167, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-18 cm long, enclosed by 2 thin, tubular sheaths at the base and another on the lower third. **Leaf** erect, thinly coriaceous, ovate, acute, sessile, 4.5-8 cm long 1.5-2.4 cm wide, the base rounded to subcordate. **Inflorescence** a fascicle of single, successive flowers borne from a peduncle 3-5 mm long within a spathe 5-7 mm long at the base of the leaf; floral bracts 5 mm long; pedicel 20 mm long; ovary 3 mm long; **sepals** white, glabrous, the dorsal sepal with 3 purple stripes, obovate, obtuse, 6 mm long, 3.5 mm wide, 3-veined, the lateral sepals completely connate into an ovate, acute, concave synsepal 7 mm long, 3 mm wide; **petals** light yellow, narrowly linear, sigmoid or uncinate, acute, 5 mm long, 0.5 mm wide, 1-veined, terete above the middle and cellular-glandular, the base bilobulate, the upper lobules of the petals overlapping over the column; **lip** red-brown with the basal margins red-purple, ovate, 6 mm long, 2.25 mm wide, the apex narrowly rounded with an obtuse callus beneath, the disc superficially channeled, with a small glenion above the base, the base subcordate, hinged to the column-foot; **column** stout, 0.5 mm long, 1 mm wide, the anther and bilobed stigma apical, the foot 0.5 mm long.

ECUADOR: **Imbabura**; epiphytic in wet forest southeast of Lita, alt. 1200 m, 11 Jan. 1992, *C. Luer, J. Luer, A. Hirtz, X. Hirtz, A. Jesup, P. Jesup, M. Evans & J. del Hierro 15557* (Holotype: MO).

This rare little species, known from only one limited area, is characterized by a slender ramicaul and an ovate, acute leaf. It is remarkable in the leaf's being very thin, and the flowers' bearing a pair of long, narrow petals that curve in the shape of a pair of tusks of a mastodon. From bilobulate bases the yellow petals descend behind the margins of the lip that are red-purple in this area. Away from the lip the petals become terete and cellular-pubescent as they curve upward. The sepals are white with three purple stripes on the dorsal. The lip above the red-purple base is red-brown to complete a very colorful flower.

Acronia matudana (C.Schweinf.) Luer, comb. nov.

Ety.: Named in honor of Eizi Matuda, collector in Mexico, who first recorded this species.

Bas.: *Pleurothallis matudana* C.Schweinf., Bot. Mus. Leafl. 5: 102, 1938, as *matudiana*.

Syn.: *Zosterophyllanthos matudianus* (C.Schweinf.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 8-35 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sleaths at the base. **Leaf** more or less spreading, coriaceous, ovate to broadly ovate, acute to obtuse and shortly acuminate, 4-14 cm long, 1.5-8 cm wide, the base sessile, cordate to deeply cordate with overlapping auricles. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 5-10 mm long; peduncles 1-2 mm long; floral bracts thin, tubular, 4-5 mm long; pedicels 5-7 mm long; ovary 3-4 mm long; **sepals** variously colored from yellow-green, more or less suffused with purple or brown, especially along the veins, to purple or brown, glabrous, the dorsal sepal ovate, acute to subacute, 6-8 mm long, 3.5-4 mm wide, 3-veined, the lateral sepals connate into an ovate, acute to subacute synsepal, 5.5-8 mm long, 4-5 mm wide, 4-veined; **petals** colored as the sepals, linear, acute, decurved, 4-6 mm long, 0.5-0.8 mm wide, 1-veined, with the margins smooth to microscopically denticulate; **lip** variously colored as the sepals, thick, ovoid, slightly arcuate above the base, 3-4 mm long, 2-2.25 mm wide, the apex subacute to obtuse, the disc broadly longitudinally channeled between thickened sides, especially toward the base, with a comparatively large glenion in the sulcus above the base, the base subcordate, thickened, shortly deflexed, hinged to the column-foot; **column** stout, 1 mm long, 1.5 mm wide, the foot thick, obsolescent, the anther, rostellum and stigma apical.

Representative collections:

MEXICO: **Chiapas**: Siltepec, 8 Aug. 1937, *E. Matuda 1577* (Holotype: AMES).

GUATEMALA: **Jalapa**: near Majulja, Costa Cura, 19 June 1882, *F.C. Lehmann 1729* (BR); Volcan Jumay, alt. 1300-2200 m, 1 Dec. 1939, *J.A. Steyermark 32381* (F, SEL). **Alta Verapaz**: near Cobán, cultivated by O. Mittelstaedt, 13 Feb. 1990, *C. Luer 14594* (MO).

EL SALVADOR: **Sta. Ana**: Hda. Los Planes, alt. 2000 m, 16 Dec. 1950, *O. Rohweder 3592* (ITIC, MO); Cerro Montecristo, alt. 2200 m, *F. Hamer 329* (SEL).

HONDURAS: **El Paraiso**: Finca Los Planes, alt. 1100 m, 13 Feb. 1982, *R. Perdomo* (MO, UNAH).

NICARAGUA: **Esteli**: Cerro Quiabú, alt. 1600 m, 17 Apr. 1980, *W.D. Stevens* (MO, SEL). **Jinotega**: Macizos de Peñas Blancas, alt. 1200-1450 m, *W.D. Stevens 11296, 11590* (MO). **Matagalpa**: north of Sta. Maria de Ostuma, alt. 1400 m, 16 Jan. 1965, *L.O. Williams et al. 27705* (F, SEL).

COSTA RICA: **Guanacaste**: Rincón de La Vieja, Volcán Santa Maria, alt. 900-1200 m, 27 Jan. 1983, *G. Davidse et al. 23470* (CR, MO). **San José**: Cordillera de Talamanca, near Villa Mills, alt. 2500 m, 11 May 1956, *L.O. Williams 19873* (SEL).

COLOMBIA: **Norte de Santander**: between Chinacota and Ragonvalia , alt. 2050 m, 8 May 1982, *C. Luer, J. Luer & R. Escobar 7774* (SEL). **Santander**: west of Velez toward Landazuri, alt. 2150 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10112* (MO). **Antioquia**: Santa Rosa de Osa, alt. 2650 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14137* (MO). **Chocó**: San José del Palmar, alt. 2000 m, cultivated at Colomborquídeas, 20 Apr. 1997, *R. Escobar 8317* (MO). **Risaralda**: near San Clemente, alt. 2100 m, 20 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7469* (SEL). **Tolima**: La Linea between Ibagué and Armenia, alt. 2850 m, 20 Oct. 1982, *C. Luer & R. Escobar 8172* (SEL). **Valle del Cauca**: El Cairo, Cerro del Inglés, alt. 2300 m, 3 Jan. 1987, *F. Silverstone-Sopkin 2902* (CUVC, MO). **Huila**: 100 Km east of Popayán, alt. 2300 m, 5 Dec. 1980, *T.B. Croat 51908* (MO).

ECUADOR: **Carchi**: between Tulcán and Maldonado, alt. 2400-2600 m, 20-21 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 6158, 6229* (AAU). **Napo**: near Papallacta, alt. 2500 m, 29 Oct. 1979, *C. Luer, J. Luer & A. Hirtz 4453* (SEL). **Pastaza**: along Río Pastaza, alt. 1500 m, 16 Mar. 1976, *C. Luer, J. Luer & P. Taylor 1087* (SEL). **Tungurahua**: near Río Negro between Baños and Puyo, alt. 1600 m, 8 Oct. 1961, *C.H. Dodson & L.B. Thien 924, 927* (SEL). **Morona-Santiago**: between Macas and Guamote, alt. 1750 m, 6 Feb. 1987, *C. Luer, J. Luer & A. Hirtz 12700* (MO); Cordillera del Condor, epiphytic in forest east of Guismé alt. 1750 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13576* (MO). **Zamora-Chinchipe**: Cachaco between Loja and Zamora, 20 May 1980, *D. D'Alessandro 93* (SEL).

PERU: **Amazonas**: Luya: montañas de Galeras, alt. 2000-2500 m, 20 June 1991, *C. Diaz et al. 4456* (MO). **Cajamarca**: San Ignacio, Cerro Picorana, alt. 2010 m, 21 Jan. 1999, *C. Diaz et al. 10393* (MO). **Huánuco**: Carpish, alt. 2400 m, 31 Aug. 1985, *D. Bennett & A. Bennett 3502, 3526* (MO).

BOLIVIA: **Cochabamba**: Chapare, road to Villa Tunari, alt. 1500 m, 17 Jan. 1988, *C. Luer, J. Luer, R. Vásquez et al. 12860* (MO).

This species is relatively frequent in its wide distribution through the Andes and Central America. Although vegetatively variable, the morphology of the flowers is surprisingly constant. Once acquainted with the thick, more or less arcuate, sulcate lip, one can easily recognize this species among all the others. Although relatively common in the Andes, it escaped a description in the last century.

The flowers are medium in size with the acute sepals between six and eight millimeters in length. The colors are variable from green suffused or occasionally mottled with brown or purple, especially along the veins, to purple or brown. The petals are narrow and smooth, and longer than the lip. The lip is oblong-ovate, subacute to obtuse and longitudinally sulcate between thickened sides of the disc. The lip is relatively thick amd more or less arcuate, especially above the base where the broad, central channel is the deepest with a comparatively large glenion.

Acronia megaglossa (Luer & Dalström) Luer, comb. nov.

Ety.: From the Greek *megaglossa*, "a big lip," referring to the comparatively large labellum.

Bas.: *Pleurothallis megaglossa* Luer & Dalström, Lindleyana 11: 168, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-12 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect, coriaceous, narrowly linear-ovate, acute, 5-8 cm long, 1-1.3 cm wide, the base sessile, rounded, shallowly cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a narrow spathe 8 mm long; peduncle ca. 1 mm long within spathe; floral bracts tubular, 5-6 mm long; pedicels 5-6 mm long; ovary 4 mm long; **sepals** pale red with darker red veins, glabrous, the dorsal sepal broadly elliptical, obtuse, 10 mm long, 6.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 9.5 mm long, 9 mm wide, 6-veined; **petals** red, narrowly oblong, acute, minutely denticulate, 5.5 mm long, 0.8 mm wide, 1-veined; **lip** red, thick, oblong, obtuse, 6.5 mm long, 3.75 mm wide, the disc shallowly concave below the elevated glenion at the base, the base subtruncate, reflexed, hinged to the base of the column; **column** stout, 1 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Carchi**: epiphytic in forest above Maldonado, alt. 2000 m, 17 Mar. 1996, *S. Dalström, S. Ingram & K. Ingram-Ferrell 2182* (Holotype: MO); between Maldonado and Chical, alt. 1400 m, flowered in cultivation, 15 Jan. 1993, *F L Stevenson 93-0116-4* (MO). **Pichincha**: between Saloya and Chiriboga, alt. 2900 m, 18 June 1968, *G. Harling, G. Storm & B. Ström 10445* (GB).

This flower of this species is basically similar to the others, perhaps most similar to *Acronia bivalvis* and its relatives. However, the lip of *A. megaglossa* is proportionately large in comparison to the sepals and petals. Most distinctive is the narrowly linear, sessile leaf that resembles the leaf of the common *A. discoidea*.

Acronia megalorhina (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *megalorhinos*, "large-nosed," referring to the protruding lip.

Bas.: *Pleurothallis megalorhina* Luer & R.Escobar, Orquideología 20: 171, 1996.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-21 cm long, enclosed below the middle by a closely appressed, tubular sheath and 2-3 others at the base. **Leaf** spreading, coriaceous, narrowly ovate, acute, 7-14 cm long, 2-3 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 10-12 mm long on top of the leaf; peduncles 2-3 mm long; floral bracts tubular, 5-6 mm long; pedicels 7-8 mm long; ovary 5 mm long; **sepals** glabrous, the dorsal sepal yellow, sometimes suffused with rose along the veins, broadly ovate, subacute to obtuse, 20 mm long, 13 mm wide, 7-veined, the lateral sepals rose, connate into an ovate, subacute synsepal, 18 mm long, 12 mm wide, 8-veined; **petals** dark purple, oblong, subacute, minutely denticulate, 10 mm long, 4 mm wide, 3-veined; **lip** erect, dark purple, ovoid-obpyriform, obtuse, 6.5 mm long, 5.5 mm wide, the margins reflexed in the distal half, nearly meeting beneath, the disc convex, with a glenion at the base, the base subcordate, attached to the column-foot; **column** stout, terete, 1.5 mm long, 2.5 mm broad, the foot thick, obsolescent, the anther, rostellum and stigma apical.

COLOMBIA: **Antioquia**: epiphytic in forest near Yarumalito, north of Santa Rosa de Osa, alt. 2350 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11389* (Holotype: MO); same area, alt. 2650 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14136* (MO).

This species is apparently endemic in the northern part of the Central Cordillera of Colombia. Slender ramicauls bear narrowly ovate, horizontal leaves nearly as long. The large, gaping flower with a protruding lip sits on top of the base of the leaf. The sepals are broad and multiveined; the petals are broad and three-veined; and the ovoid lip stands erect beneath the column. The sides above the middle are rolled under to create an obtuse, tubular apex.

Acronia microcardia (Rchb.f.) Luer, comb. nov., subsp. **microcardia**.

Ety.: From the Greek *microcardia*, "with small heart," referring to the comparative small size of the leaf and labellum.

Bas.: *Pleurothallis microcardia* Rchb.f. *microcardia*, Bonplandia 3: 72, 1855.

Syn.: *Pleurothallis stenosepala* Rolfe, Bull. Misc. Inform. 208, 1892.
Ety.: From the Latin *stenosepalus*, "with narrow sepal," referring to that unusually narrow character.

Syn.: *Pleurothallis cundinamarcae* Schltr, Notizbl. Bot. Gart. Berlin 7: 528, 1921.
Ety.: Named for the department of Cundinamarca where the species was collected.

Syn.: *Pleurothallis chachatoynsis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 45, 1924.
Ety.: Named for the community of Chachatoy, near where the species was collected.
Syn.: *Zosterophyllanthos stenosepalus* (Rolfe) Szlach. & Marg., Polish Bot. J. 46(2): 121, 2001.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 10-25 cm long, with a close, tubular sheath from below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 6-13 cm long, 1.2-3 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower, commonly lying against the leaf, borne from a spathe 10-13 mm long at the base of the leaf; peduncles 2-4 mm long, concealed within the spathe; floral bracts tubular, 5-8 mm long; pedicels 8-13 mm long; ovary 4-6 mm long; **sepals** usually light yellow-green, glabrous, the dorsal sepal narrowly ovate, acute, 12-25 mm long, 2.25-5 mm wide near the base, 3-veined, the lateral sepals connate into a narrorly ovate, acute synsepal, 12-23 mm long, 4-7 mm wide, 4-veined; **petals** narrowly linear-ovate, acute, 5-13 mm long, 1 mm wide, 1-veined, minutely to microscopically serrate; **lip** yellow to orange, ovate-oblong, obtuse, 4-7 mm long, 2-4 mm wide, minutely verrucose, minutely denticulate, the base subtruncate with a glenion, concave on the end, hinged to the column-foot; **column** stout, terete, 1-1.5 mm long, 1.5-2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Santander del Norte**: Agua de la Virgen, *Wagener 610* (Holotype: W; Isotype: K); Páramo de Jurisdicciones, alt 2600 m, 10 May 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6627* (SEL). **Cundinamarca**: between Bogotá and Fusagasuga, alt. 1770 m, *R. Schnitter s.n.* (holotype of *P. cundinamarcae* presumably destroyed at B). **Cauca**: highlands of Popayán, alt. 1500-2000 m, *F.C. Lehmann 7070* (K). **Valle de Cauca**: between Cali and Buenaventura, alt. 1200 m, 11 Oct. 1982, *L. Albert, J. Folsom, J. Brand & D. Sánchez 2574* (HUA, MO); highlands of Popayán, alt. 1500-2000 m, *F.C. Lehmann 7070* (K). **Nariño**: epiphytic near Chachatoy, near Pasto, alt. 2300-2400 m, Oct. 1921, *W. Hopp 48* (holotype of *P. chachatoynsis* destroyed at B).
ECUADOR: **Morona-Santiago**: between Mendez and Morona, alt. 900 m, date?, *A. Hirtz 16244* (MO); *A. Hirtz 7035* (MO), C. Luer illustr. 19356; Chiguinda, alt. 1400 m, cultivated by Ecuagenera, Gualaceo, 11 Jan. 2004, *A. Hirtz 8668* (MO).
BOLIVIA: **La Paz**: Nor Yungas, north of Caranavi, alt. 1550 m, *C. Luer 12933* (MO).

In its wide distribution through the Andes, this frequent species is especially variable in the dimensions of the flowers. The leaves vary from narrowly cordate to oblong-ovate cordate. Easily recognized, the single flower commonly lies in the center of the base of the leaf with the long, narrow dorsal sepal pointed backward, the synsepal resting in the groove, and the narrow petals usually pointed outward. In *Acronia microcardia* subspecies *cubitoria*, the petals are filiform with the tips curving around the edges of the leaf. The floral parts of *A. microcardia* subspecies *tamaensis* are about twice longer.

Acronis microcardia Rchb.f. subsp. **cubitoria** (Luer) Luer, comb. et stat. nov.

Bas.: *Pleurothallis cubitoria* Luer, Phytologia 49: 202, 1981.

Ety.: From the Latin *cubitorius*, "of a lying posture," referring to the posture of the flower suggesting a snooze in a chaise longue.

Plant medium-sized to large, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 15-20 cm long, with a close, tubular sheath near the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 11-15 cm long, 2.3-2.7 cm wide, the base rounded, sessile, shallowly cordate. **Inflorescence** a single, successive flower lying flat against the leaf, borne from a spathe 10-12 mm long at the base of the leaf; peduncles 4-5 mm long, concealed within the spathe; floral bracts tubular, 5 mm long; pedicels 7 mm long; ovary 4 mm long; **sepals** light yellow-green, glabrous, the dorsal sepal narrowly ovate, acute, long-acuminate, 32-40 mm long, 3.5 mm wide near the base, 3-veined, the lateral sepals connate into a narrorly linear-ovate, attenuate, acute synsepal, 25-38 mm long, 5 mm wide, 4-veined; **petals** widely reflexed, narrowly linear, acute, 10-13 mm long, 1 mm wide at the base, much narrower above, 1-veined; **lip** yellow, narrowly triangular, narrowly obtuse, 8.5 mm long, 3 mm wide, cellular verrucose, the base subtruncate, with a comparatively large glenion, concave on the end, hinged to the column-foot; **column** stout, terete, 1.5 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: above Valladolid, alt. ca. 2600 m, collected by Walter Teague, July 1975, cultivated at San Francisco, CA, Aug. 1979, *C. Luer 4110* (Holotype: SEL); upstream from Valladolid, alt. 1700-1800 m, 16 Apr. 1986, *D. D'Alessandro 602* (MO); west of Zumba, alt. 1800 m, date, *S. Dalström 1193* (MO), C. Luer illustr. 11237.

This taxon is possibly an extreme among the numerous variations considered to be *Acronia microcardia*. It is apparently restricted to southeastern Ecuador. It is distinguished by a long narrow leaf with the flower lying upon the surface above the base, but the dorsal sepal is so long that it extends beyond the base of the leaf along the ramicaul. The long, thread-like filiform petals stretch to either side with the tips curving around the margins of the leaf.

Acronia microcardia Rchb.f. subsp. **tamaensis** (Foldats) Luer, comb. et stat. nov.

Bas.: *Pleurothallis tamaensis* Foldats, Acta Bot. Venez. 3: 392, 1969.

Ety.: Named for the Paramó de Tamá where the species was collected.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 20-30 cm long, with a close, tubular sheath from below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 13-15 cm long, 4 cm wide, the base rounded, sessile, shallowly cordate. **Inflorescence** a single, successive flower, lying against the leaf, borne from a spathe 10-12 mm long at the base of the leaf; peduncles 8-10 mm long, concealed within the spathe; floral bracts tubular, 7-8 mm long; pedicels 13 mm long; ovary 6 mm long; **sepals** yellow, glabrous, the dorsal sepal narrowly ovate with revolute sides, acute, 30-40 mm long, 5 mm wide near the base, 3-veined, the lateral sepals connate into a narrorly ovate, acute synsepal, 33-35 mm long, 8 mm wide, 6-veined, with the sides revolute; **petals** narrowly triangular, acute, 13 mm long, 1.25 mm wide, 2.5 mm wide at the base, 1-veined, microscopically serrate; **lip** dull red, oblong, obtuse, 11 mm long, 4 mm wide, cellular verruculose, the base subtruncate with a glenion, concave on the end, hinged to the column-foot; **column** stout, terete, 2 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

VENEZUELA: **Tachira**: below Páramo de Táma, near Colombian frontier, alt. 2475-2550 m, 18 May 1967, *J.A. Steyermark & G.C.K. Dunsterville 98336* (Holotype: VEN; Isotypes: AMES, NY); same collection data, *G.C.K. Dunsterville 73* (Paratype: VEN, MO), C. Luer illustr. 17197.

This taxon is merely an immense variation of the frequent and widely distributed *Acronia microcardia*. Apparently it is limited in distribution to the mountains of easternmost Venezuela. Specimens approaching it have been found in the Oriente of Ecuador. It is treated here as a subspecies of *A. microcardia* because of the distinctness of the flowers with the individual sepals reaching four centimeters in length, and with the lip more than one centimeter long.

Acronia millei (Schltr.) Luer, comb. nov.

Ety.: Named for Father Louis Mille, S.J., who collected this species.

Bas.: *Pleurothallis millei* Schltr., Repert. Spec. Nov. Regni Veg. 14: 131, 1915.

Syn.: *Pleurothallis crassapex* Luer, Selbyana 3: 90, 1976.

Ety.: From the Latin *crassapex*, "a thick apex," referring to the tip of the labellum.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, to 35 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, coriaceous, oblong, subacute, acuminate, 10-12 cm long, 2-3.7 cm wide, the base sessile, subcordate. **Inflorescence** a single, successive flower, subtended by a reclining spathe ca. 1 cm long; peduncles with pedicels ca. 1 cm long; floral bracts ca. 5 mm long; ovary shorter; **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute, 8.5 mm long, 4-5 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 8.5 mm long, 4-5 mm wide; **petals** narrowly oblong-subfalcate, acute, glabrous, 6.5 mm long, ca. 0.5 mm wide, 1-veined; **lip** glabrous, oblong, obtuse, 4.5 mm long, ca. 2 mm wide, the apex hamate, incurved, the disc with a glenion above the base, the base truncate, concave on the end, hinged to the column-foot; **column** stout, 2.5 mm long including the foot, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: interandine forests, *L. Mille 35* (Holotype destroyed at B); between Quito and Santo Domingo, alt. 1500 m, 3 Mar. 1975, *C. Luer & R. Kent 273* (holotype of *P. crassapex*: SEL, Neotype of *P. millei* here designated); same area, alt. 1200 m, 1 Nov. 1961, *C.H. Dodson & L.B. Thien 1234* (SEL); Estación Los Faisanes, old road from Quito to Santo Domingo, alt. 1400 m, 18 Mar. 1985, *G. Harling & L. Andersson 23090* (GB). **Carchi**: Maldonado, alt. 1550, 13 Apr. 1977, *M.T. Madison 3901* (SEL); Río Blanco above Chical, alt. 1300-1500 m, 25 Sept. 1979, *A. Gentry & G. Shupp 26600* (MO, SEL); Bolívar, above La Paz, alt. 3100 m, 18 Feb. 1998, *C. Luer, J. Luer, A. Hirtz & J. del Hierro 18750* (MO).

This species is similar, both vegetatively and florally, to the multitude of species most closely related to the *Acronia bivalvis*-complex. It is a large plant with elongated ramicauls and oblong, subcordate leaves with a reclining spathe. The flowers are basically similar, but distinguished by the acute sepals, with the dorsal three-veined; narrowly oblong, entire petals; and an oblong, often more or less slightly pandurate lip with the tip thickened beneath with a broad, conical callus.

Acronia muriculata (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *muriculatus*, "minutely muriculate," referring to the sheaths, sepals and petals.

Bas.: *Pleurothallis muriculata* Luer & Hirtz, Lindleyana 11: 172, 1996.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 9-13 cm long, enclosed below the middle by 3 closely appressed, tubular sheaths, with the lowermost sheaths densely short-muriculate. **Leaf** more or less spreading, coriaceous, ovate, acute, 10-12 cm long, 4-5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by an inflated spathe 15-20 mm long; peduncles 4-5 mm long; floral bracts tubular, 5-6 mm long; pedicels minutely muriculate, 7 mm long; ovary densely short-pubescent, 3-4 mm long; **sepals** dark rusty yellow, purple on the distal third, veined in purple, fleshy, minutely muriculate, the dorsal sepal broadly ovate, obtuse, 14 mm long, 11 mm wide, 9-(11-)veined, the lateral sepals connate into a broadly ovate, concave, obtuse synsepal, 14.5 mm long, 11 mm wide, 10-veined; **petals** yellow, narrowly ovate, acute, 10 mm long, 3 mm wide, 3-veined; **lip** dull yellow with purple lines, thick, ovoid, 5.5 mm long, 5.5 mm wide, the apex rounded with a minute apiculum, the disc thickened on either side of a central, longitudinal cavity, the base thickened, subtruncate, hinged to the column-foot; **column** stout, terete, 1 mm long, the foot thick, obsolescent, the anther, rostellum and stigma apical.

EDUADOR: **Morona-Santiago**: Cordillera del Condor, epiphytic in forest east of Guismé alt. 1750 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13576* (Holotype: MO).

This species, known from only one collection in the Cordillera del Condor, is unique in the section with the densely short-muriculate, or coarsely short-pubescent, lowermost sheaths of the ramicauls. Among others, pubescent sheaths are also known in the genera *Acianthera, Pleurothallis, Restrepiopsis* and *Stelis*.

Acronia muriculata is distinguished by the relatively large, fleshy flower borne on top of a large, deeply cordate leaf. The broad sepals are multiveined and cellular-papillose; the petals are acute and 3-veined; and the lip is thick, ovoid, obtuse with a sulcate disc.

Acronia nephroglossa (Schltr.) Luer, comb. nov.

Ety.: From the Greek *nephroglossa*, "kidney-tongued," referring to the shape of the labellum.

Bas.: *Pleurothallis nephroglossa* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 61, 1921.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, suberect to horizontal, 10-35 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, thickly coriaceous, oblong-ovate, obtuse, to acute, shortly acuminate, 7-16 cm long, 4-6 cm wide, the base sessile, cordate. **Inflorescence** a single flower, sometimes 2-3 produced simultaneously, subtended by a reclining spathe 1.5-2.5 cm long; peduncles ca. 5 mm long, concealed within the sheath; floral bracts inflated, 10-12 mm long; pedicels 12-15 mm long; ovary 8 mm long; **sepals** greenish brown to rose-brown, with darker veins, fleshy, minutely short-pubescent, the dorsal sepal ovate, acute, concave, 20-35 mm long, 15-20 mm wide unexpanded, 7- to 9-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, 21-30 mm long, 10-15 mm wide; **petals** greenish-orange, fleshy, oblong, obtuse, coarsely minutely papillose, 11-12 mm long, 3-4 mm wide; **lip** yellow-orange, densely and coarsely papillose, transversely elliptical, suborbicular, cordate at the base, with the apex rounded and convex, 7 mm long, 8 mm wide, the disc convex, with a flat glenion at the base, the basal angles obtuse, embracing the column, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: Andes of Ecuador, 1857-59, *R. Spruce 5439* (Holotype destroyed at B, Lectotype here designated: AMES; Isolectype: C). **Pichincha**?: Monte Guayapata, June 1858, *W. Jameson 5439* (K). **Napo**: between Papallacta and Baeza, alt. 2800 m, 5 June 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 6876* (AAU, AMES). **Morona-Santiago**: between Limón and Gualaceo, alt. 2900-3100 m, 12 June 1979, *B. Løjtnant, A. & U. Molau 14688* (AAU, GB); east of the pass between Gualaceo and Limón, alt. 2800 m, 8 Mar. 1981, *C. Luer, J. Luer & A. Hirtz 6121* (SEL); between San Juan Bosco and Gualaceo, alt. 2800 m, 28 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11000* (MO); east of Sigsig, alt. 2750 m, 15 May 1988, *C. Luer, A. Hirtz, A. Andreetta & W. Teague 13337* (MO); same area, alt. 3000 m, 11 Aug. 1990, *A. Hirtz 5043* (MO); same area, 2700 m, 1 May 2004 *A. Hirtz 8718* (MO). **Azuay**: south of Cumbe toward Girón, alt. 3000 m, 27 Feb. 1982, *C. Luer & A. Pozo 7033* (SEL), near Cuenca, cultivated by Eduardo Sanchez, 6 Mar. 2001, *C. Luer 19750* (MO). **Loja**: scrub north of Loja, alt. 2900 m, 1 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 4647* (AAU). **Zamora-Chinchipe**: Nudo de Sabanilla, alt. 2800 m, 19 Feb. 1982, *D. D'Alessandro 161* (SEL).

This large, robust species is relatively frequent and widely distributed on the eastern slopes of the Andes of Ecuador. It is distinguished by the large, thick, oblong, shortly acuminate leaf and one to three large, fleshy, simultaneous flowers. The floral parts vary considerably with the variations found at random among the collections. The sepals vary from 20 to 35 mm in length, from narrowly to broadly ovate. The petals are fleshy, broad and coarsely papillose. The similarly papillose lip is transversely suborbicular-elliptical, or reniform, broadly rounded at the convex apex, and concave between cordate angles at the base. Schlechter's rendition (1921: 61) is accurate except for the transposition of the dorsal sepal and the synsepal.

Acronia nipterophylla (Luer) Luer, comb. nov.

Ety.: From the Greek *nipterophyllon*, "basin-shaped feaf," referring to the concave leaf.

Bas.: *Pleurothallis nipterophylla* Luer, Selbyana 3: 148, 1976.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 7-12 cm long, enclosed below the middle by 2-3 tubular sheaths. **Leaf** spreading, rigidly coriaceous, ovate, acute, deeply concave, 5-5.5 cm long, 3.2-3.8 cm wide expanded, the base sessile, deeply cordate with the lobes incurved and overlapping. **Inflorescence** 1-3 single flowers, produced successively, subtended by a reclining spathe 10-12 mm long; peduncles ca. 2 mm long, concealed within the sheath; floral bracts ca. 8 mm long; pedicels ca. 8 mm long; ovary coarsely papillose 1.5 mm long, 1.5 mm broad; **sepals** fleshy, deep purple, minutely verrucose externally, the dorsal sepal ovate, concave, obtuse to subacute, 4 mm long, 3 mm wide, 3-veined, the lateral sepals connate into a deeply concave, ovate, obtuse synsepal, 3.5 mm long, 4 mm wide expanded; **petals** dark purple, fleshy, glabrous, oblong, acute, 3 mm long, 0.8 mm wide; **lip** purple, glabrous, ovoid, obtuse, deeply concave, 2.5 mm long, 2.25 mm wide unexpanded, the base thickened with a pair of marginal calli, concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: between Loja and Zamora, alt. 1500 m, collected 5 Aug. 1975, cultivated 14 Feb. 1976, *C. Luer, G. Luer & S. Wilhelm 656* (Holotype: SEL).

Only one collection of this distinctive species is known. It is characterized by rigidly concave leaves with cordate bases that incurve and overlap. One to three small, deep purple flowers are borne within the cavity. The ovaries are coarsely papillose. The lip is ovoid and deeply concave.

Acronia nitida (Luer) Luer, comb. nov.

Ety.: From the Latin *nitidus*, "shiny, polished," referring to the leaves.

Bas.: *Pleurothallis nitida* Luer, Selbyana 3: 352, 1977.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect or suberect, 3-6 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect or horizontal, rigid, thickly coriaceous, elliptical-ovate, obtuse to subacute, 2.5-3.5 cm long, 1.4-1.8 cm wide, the base shallowly cordate, sessile. **Inflorescence** a successive, single, resupinate flower, produced successively, from a spathe 5-6 mm long at the base of the leaf; peduncles 2-3 mm long, concealed within the spathe; floral bracts thin, tubular, 3-5 mm long; pedicels 5-7 mm long; ovary 3 mm long; **sepals** dark purple, fleshy, glabrous, the dorsal sepal ovate, subacute to obtuse, concave, 6 mm long, 4 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 6 mm long, 4 mm wide, 4-veined; **petals** purple, oblong, acute, long-lacerate, 5 mm long, 1 mm wide excluding the fringe, 1-veined; **lip** purple, thick, ovate, obtuse, shortly acuminate, 3 mm long, 2 mm wide, with the margins minutely crenulate, with the basal angles, erect, broadly rounded, flanking the column, the disc concave between thickened halves, with a glenion, the base truncate, shortly deflexed, hinged on the end to the base of the column; **column** stout, 2.5 mm long, the foot obsolescent, the anther, rostellum and transverse stigma apical.

PANAMA: **Chiriquí**: elfin forest, Cerro Hornito, alt. ca. 1700 m, 15 Dec. 1976, *C. Luer, A. Luer, R.L. Dressler, N.H. Williams & F L Stevenson 1337* (Holotype: SEL).

This species, known only from western Panama, is related to *Acronia dorothea*, *A. excavata* and *A. sanchoi*. Vegetatively, it is similar except that the thick leaves are subcordate instead of broadly cuneate at the base; the flowers are purple-black with fringed petals; and the lip is thickly ovate and crenulate with erect basal lobes.

Acronia nossax (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *nossax*, "a chick, a young bird," in allusion to the appearance of the gaping flower with a visible tongue.

Bas.: *Pleurothallis nossax* Luer & R.Escobar, Orquideología 14: 160, 1981.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, terete, 9-16 cm tall, with a close, tubular sheath below the middle and 1-2 others at the base. **Leaf** spreading, more or less horizontal, coriaceous, narrowly ovate, acute, 7-11 cm long, 22-28 mm wide, the base cordate, sessile. **Inflorescence** a large, gaping, solitary flower borne successively upon the leaf, from a 1 cm long, fugacious spathe at the base of the leaf; peduncle 1-2 mm long within the sheath; floral bract close, tubular, 10 mm long; pedicel 10 mm long; ovary sigmoid, 5 mm long; **sepals** membranous, glabrous, yellow, flecked with red above the middle, the dorsal sepal narrowly ovate, acute, concave below the middle, reflexed above, 37 mm long, 8 mm wide, 7-veined; lateral sepals connate into a narrowly ovate, acute synsepal, bulbous-concave in the lower third, then reflexed, 35 mm long, 10 mm wide expanded, 12-veined; **petals** ovate, the apex red-purple, acuminate, acute, shortly unguiculate, 15 mm long, 7.5 mm wide, 3-veined; **lip** light green, narrowly long-unguiculate below the middle, red-purple, ovate, acute, reflexed above the middle, reclining upon the synsepal, 25 mm long, 5 mm wide; **column** white with a green apex, stout, 1.5 mm long and broad, the anther apical, red.

COLOMBIA: **Cauca**: epiphytic in forest between Uribe and Quebraditas, alt. 2150 m, 15 Aug. 1974, *R. Escobar et al. 1520* (Holotype: JAUM); cultivated at La Ceja by M. & O. Robledo, 27 Jan. 1978, *C. Luer 2338* (Clonotype: SEL); same area, "La Gallera," alt. 2050-2300 m, 9 Aug. 1978, *R. Escobar et al. 2417* (JAUM, SEL).

As in many other closely allied species in *Acronia*, the large, gaping flower rests upon the blade of the leaf. The sepals reflex above deeply concave bases to reveal the pointed lip flanked by the pointed petals lying upon the down-curved synsepal. The lip is remarkably long-unguiculate.

Acronia obpyriformis (Luer) Luer, comb. nov.

Ety.: From the Latin *obpyriformis*, "obpryiform," referring to the labellum.

Bas.: *Pleurothallis obpyriformis* Luer, Selbyana 3: 150, 1976.

Plant small, epiphytic, caespitose; roots slender. Ramicauls more or less horizontal, 2.5-5 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** spreading, coriaceous, narrowly ovate, 2.5-4 cm long, 0.7-1.1 cm wide, the base cuneate, sessile. **Inflorescence** a succession of single flowers, borne from a spathe 4 mm long, at the base of the leaf; peduncles less than 1 mm long, enclosed within the spathe; floral bracts tubular, 4.5 mm long; pedicels 4.5 mm long; ovary 2 mm long; **sepals** red-purple, glabrous, the dorsal sepal elliptical, subacute to obtuse, 4.5-5 mm long, 2-2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal 3.5-4.5 mm long, 3 mm wide, 4- to 6-veined; **petals** dark red, linear-oblong, acute, 3.25-4 mm long, 0.25 mm wide; **lip** red-purple, thick, obpyriform to ovate, or subpanduriform, 2.5-3 mm long, 1.75-2 mm wide, with the apex broadly rounded, the disc shallowly concave centrally, the base subcordate with a small glenion, hinged to the column-foot; **column** stout, broadly terete, 1 mm long, 1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Napo**: tall, felled trees west of Tena, alt. ca. 500 m, 27 July 1975, *C. Luer, G. Luer & S. Wilhelm 507* (Holotype: SEL).

This little species from the tops of tall trees of the rain forest is known only from lowland, eastern Ecuador. It is most similar to *Acronia acestrophylla* from which it is distinguished by the broader, narrowly ovate leaves; filiform petals; and a pyriform-shaped lip.

Acronia octavioi (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named in honor of Hermano Octavio Ospina of Sibundoy who first discovered and cultivated this species.

Bas.: *Pleurothallis octavioi* Luer & R.Escobar, Orquideología, 14: 164, 1981.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, terete, 13-22 cm long, with a close, tubular sheath below the middle and 2 others at the base. **Leaf** spreading, coriaceous, narrowly ovate, acute, acuminate, 7-8.5 cm long, 2.2-2.7 cm wide, the base sessile, cordate. **Inflorescence** a solitary, non-resupinate flower produced successively from a reclining spathe 13-15 mm long, from the base of the leaf, the peduncles enclosed, 5 mm long; floral bract 5-8 mm long; pedicel 5-10 mm long; ovary 6 mm long; **sepals** light yellow-green, the middle sepal oblong, obtuse, flat, 12-15 mm long, 8-9 mm wide, 3-veined, the lateral sepals connate into a transversely ovate, concave, broadly obtuse synsepal, 9-10 mm long, 12-13 mm wide, convex on either side near the base; **petals** oblong-falcate, 8 mm long, 2.5 mm wide, erose, acuminate, acute, the base dilated, biauriculate; **lip** yellow, oblong, 5 mm long, 3.25 mm wide, obtuse, glandular-cellular, the glenion small, elevated, the base thick, reflexed, concave; **column** stout, 1 mm long, 2 mm wide, with a broad, thick foot.

COLOMBIA: **Putumayo**: epiphytic in cloud forest east of the pass between Sibundoy and Mocoa, alt. 2200 m, 20 Jan. 1979, *C. Luer, J. Luer, O. Ospina et al. 3725* (Holotype: SEL); Valle de Sibundoy, cultivated by O. Ospina in Sibundoy, 31 July 1978, *C. Luer 3095* (JAUM, SEL). **Risaralda**: near Pereira, cultivated by S. Tsubota, 10 May 1993, *C. Luer 16758* (MO). **Cauca**: ?Inza, alt. 1500-2000 m, *F.C. Lehmann s.n.* (K). **Huila**: Páramo de Purace, east of the pass, alt. 2450 m, 14 Nov. 1982, *C. Luer & R. Escobar 8398* (SEL).

This species of southern Colombia is characterized by the widely spread, non-resupinate, pale yellow-green flower resting semi-erect on the surface of a spreading, narrowly cordate leaf. The lip stands erect within the uppermost sepal, while the broad, flat middle sepal extends below. The petals curve upward from either side.

Acronia omoglossa (Luer) Luer, comb. nov.

Ety.: From the Greek *omoglossa*, "shoulder-tongue," referring to the base of the labellum.

Bas.: *Pleurothallis omoglossa* Luer, Selbyana 3: 152, 1976.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 7-37 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect to suberect, coriaceous, ovate to narrowly ovate, acute, 5-11 cm long, 2-4 cm wide, the base sessile, cordate. **Inflorescence** a single flower, subtended by a reclining spathe 6-12 mm long; peduncles 2-3 mm long, con-

cealed within the spathe; floral bracts tubular, 5-8 mm long; pedicels 7-13 mm long; ovary 4-5 mm long; **sepals** red-brown to yellow-brown, glabrous, the dorsal sepal elliptical-ovate, obtuse, 7-10 mm long, 5.5-8 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, 6-8 mm long, 5.5-7 mm wide; **petals** oblong, subacute, minutely denticulate-erose, 5-7 mm long, 1.5-1.8 mm wide, 1-veined; **lip** red or brown, oblong-ovate, obtuse to rounded at the apex, 4.5-5 mm long, 2.75-3.25 mm wide, the disc convex, with a small glenion with elevated lateral margins at the base, the base truncate between obtuse, more or less incurved, basal angles, shallowly concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: between Loja and Zamora, alt. 1000 m, collected 5 Aug. 1975, cultivated 3 Jan. 1976, *C. Luer, G. Luer & S. Wilhelm 639* (Holotype: SEL); above Valladolid, alt. 2000 m, *C. Luer, S. Dalström, T. Höijer & J. Kuijt 9618* (MO). **Morona-Santiago**: Chiviaza, east of Limón, alt. 1300 m, 21 Oct., 1999, *A. Hirtz, E. Sánchez & S. Marin 7031* (MO), C. Luer illustr. 20451. **Pastaza**: along Río Negro, alt. 1500, 18 Mar. 1975, *C. Luer, J. Luer & P. Taylor 673* (SEL).
SURINAME: Wilhelmina Mountains, alt. 900 m, 9 July 1981, *R. Determann s.n.* (SEL), C. Luer illustr. 6818.

This species of comparatiely low altitudes is closely allied to the *Acronia bivalvis*-complex. It is distinguished by narrow leaves and small flowers; a three-veined dorsal sepal; and proportionately large, oblong and denticulate petals. The petals are sometimes as long as the synsepal. Most distinguishing is the lip with basal angles that are slightly incurved from either side to the truncate base. The disc is convex, and the lateral margins of the glenion are elevated.

Acronia oncoglossa (Luer) Luer, comb. nov.
Ety.: From the Greek *onkoglossa*, "a hook-shaped tongue," referring to the shape of the lip.
Bas.: *Pleurothallis oncoglossa* Luer, Lindleyana 11: 86, 1996.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 10-45 cm long, with a close, tubular sheath on the lower half and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, acuminate, 14-19 cm long, 4-7 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single, purple to red-brown flowers, borne on top of the leaf, subtended by a narrow spathe 1-2 cm long; peduncles 5-10 mm long, concealed within the spathe; floral bract infundibular, 10-15 mm long; pedicel 10-22 mm long; ovary 7-10 mm long; **sepals** glabrous, the dorsal sepal broadly ovate, obtuse, 15-19 mm long, 12-17 mm wide, 9-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 12-18 mm long, 15-20 mm wide, 10- to 12-veined; **petals** obliquely triangular, subfalcate, acute, 10-13 mm long, 2.5-4 mm wide, 3-veined; **lip** thick, triangular, 7-11 mm long, 5-7.5 mm wide at the base, the apex narrowly acute, incurved, the disc shallowly concave in the lower third above the glenion at the base, the base truncate and flattened on the deflexed end, hinged to the column-foot; **column** stout, semiterete, flattened, 1 mm long, 4.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COSTA RICA: without collection data, collected by Leon Glicenstein, cultivated by P. & A. Jesup in Bristol, CT, 10 Dec. 1988, *C. Luer 13833* (Holotype: MO). **Heredia**: above San Jerónimo, 18 Sept. 1979, *C. Luer, J. Luer, K. Walter & L. Glicenstein 4219* (SEL). **Cartago**: near San Cristobal, alt. 1900 m, 22 Sept. 1979, *C. Luer, J. Luer & K. Walter 4250* (SEL).

This large species is uncommon and local in Costa Rica. It is similar in all respects to the common and variable *Acronia cardiothallis*, the primary difference being the large, thick, acutely triangular lip with a narrow, hook-like apex, an extreme modification for an unknown reason.

Acronia ortegae (Luer & Hirtz) Luer, comb. nov.
Ety.: Named in honor of Santiago Ortega of Quito, Ecuador, co-discoverer of this species.
Bas.: *Pleurothallis ortegae* Luer & Hirtz, Lindleyana 11: 174, 1996.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-25 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** coriaceous, acutely deflexed, cordate-ovate, acute, 7-11 cm long, 3.5-4 cm wide, the base sessile, more or less concave, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, borne from an erect to suberect, conduplicate spathe at the base of the leaf, 15 mm long, 6 mm broad, enclosing the peduncles, pedicels and floral bracts; peduncles 2-3 mm long; floral bracts tubular, 7 mm long; pedicels 7 mm long; ovary 7 mm long, cellular-papillose; **sepals** light yellow, suffused with purple medially, glabrous, the dorsal sepal broadly ovate, obtuse, 11 mm long, 9.5 mm wide, 7(9-)veined, the lateral sepals connate into a trans-

versely ovate synsepal with the apex rounded, 8 mm long, 11 mm wide, 8-veined; **petals** yellow, sagittate, acute, unguiculate, 7.5 mm long, 5 mm wide, 3-veined; **lip** purple, transversely cordate, concave, 3 mm long, 5 mm wide, with the apex obtusely acuminate, with the margins thickened and cellular-papillose, the surface of the concave disc sparsely cellular-papillose, the basal lobes flanking the column, hinged centrally to the column-foot; **column** stout, terete, 1 mm long, 2.5 mm broad, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Napo**: epiphytic in forest near Cosanga, alt. ca. 1,500 m, 13 Aug. 1991, *A. Hirtz & S. Ortega 5400* (Holotype: MO). **Sucumbíos**: above La Bonita, alt. 2300 m, 15 Mar. 1996, *S. Dalström, S. Ingram & K. Ferrell-Ingram 2157* (MO).

This species from the eastern slopes of the cordillera of central Ecuador is related to the sympatric *Acronia cardiostola*, but *A. ortegae* is distinguished by the broad, obtuse, glabrous sepals; entire, glabrous sagittate, unguiculate petals; and a transversely cordate, concave lip with an obtusely acuminate apex. The margins of the lip are thickened with the inner edge cellular-papillose. Similar papillae are scattered over the surface of the concave disc where a large, flat glenion is visible.

Acronia orygmoglossa Luer & Dressler, sp. nov.

Ety.: From the Greek, *orygma, glossa*, "trench lip," referring to the channeled claw of the lip.

Planta mediocris foliis anguste ovatis acutissimis, sepalo dorsali ovato reflexo supra medium concavo, synsepalo late ovato, petalis oblongis denticulatis, labello ovato apice obtuso ad basim profunda fissurato con ungue elongato canalliculato, columnae pedem elongato distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-13 cm long, with a close, tubular sheath on the lower third and another sheath at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 8-10 cm long, 2-2.5 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, borne from a slender, reclining spathe at the base of the leaf, 8 mm long, enclosing the peduncles, peduncles ca. 2 mm long; floral bracts tubular, ca. 5 mm long; pedicels 5-6 mm long; ovary 2 mm long; **sepals** light yellow-green, glabrous, the dorsal sepal ovate, subacute, erect below the middle, concave and recurved above the middle, 6.5 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into a transversely ovate synsepal with the apex obtuse, 5.5 mm long, 5 mm wide, 6-veined; **petals** light yellow-green, oblong, decurved, acute, denticulate, 5 mm long, 1 mm wide, 1-veined; **lip** red-brown, ovate, obtuse, minutely denticulate, 3.5 mm long, 2 mm wide, the base cleft for one third the length of the blade, with the margins of the cleft thickened and protruding, the cleft continuing posteriorly as an elongated, channeled claw, 1 mm long, firmly attached to a channeled column-foot; **column** stout, semiterete, 1 mm long, 1 mm broad, the foot elongated and channeled, 1 mm long, obsolescent, with the anther, rostellum and stigma apical.

PANAMA: **Chiriquí**: Camp Hornito, Fortuna dam site, alt. 1000-1200 m, 13 Aug. 1976, *R.L. Dressler 5351* (Holotype: SEL), C. Luer illustr 20444.

This species from westernmost Panama is unique in the genus. It was collected once by Dressler in 1976 in the lush forest that was subsequently cleared for the Fortuna dam. The leaves are narrowly ovate and long-acute. The dorsal sepal recurves near the middle, and is concave above the middle. The petals are oblong and denticulate. The lip is held forward from the synsepal by an elongated column-foot that is firmly attached to an elongated, channeled claw. The claw is continuous with a deep cleft at the base of the lip. No close relatives are known.

Acronia oxapampae (Luer) Luer, comb. nov.

Ety.: Named for the Peruvian community of Oxapampa near where the species was collected.

Bas.: *Pleurothallis oxapampae* Luer, Selbyana 7: 121, 1982.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-9 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect to suberect, coriaceous, narrowly ovate, acute, 3-6.5 cm long, 1-1.7 cm wide, the base sessile, cordate. **Inflorescence** a single flower, produced successively, subtended by a reclining spathe 7-10 mm long; peduncles 2 mm long, concealed within the sheath; floral bracts tubular, 8 mm long; pedicels 10 mm long; ovary 3 mm long; **sepals** dark purple, glabrous, the dorsal sepal ovate, acute, 7 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 7 mm long, 5 mm wide; **petals** dark purple, narrowly oblong, acute, pubescent, denticulate, 5 mm long, 0.8 mm wide, 1-veined; **lip** dark purple, narrowly

oblong with revolute margins, 4 mm long, 1 mm wide, 2 mm across the dilated base, the apex acute, shortly acuminate, incurved, the base obtusely angled, with a small glenion, shortly unguiculate, shallowly concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 1.5 mm wide, the foot thick, 1 mm long, with the anther, rostellum and stigma apical.

PERU: **Pasco**: forest south of Oxapampa, alt. 1800 m, 31 Jan. 1979, *C. Luer & J. Luer 3830* (Holotype: SEL).

This species, known only from the original collection, is apparently endemic in central Peru. It is characterized by the small habit with narrowly ovate leaves; an acute dorsal sepal and synsepal; narrow, pubescent-denticulate petals; and a narrow lip with recurved sides, with an incurved, apiculate apex, and a dilated base.

Acronia palliolata (Ames) Luer, comb. nov.

Ety.: From the Latin *palliolatus*, "pale sided," without obvious reference.

Bas.: *Pleurothallis palliolata* Ames, Proc. Bot. Soc. Wash. 35: 86, 1922.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 8-17 cm long, with a close, tubular sheath on the lower half and 2 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, ovate, acute, 7-8.5 cm long, 2.5-4 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, sometimes two borne simultaneously, subtended by a narrow spathe 1 cm long; peduncles 2-3 mm long; floral bracts tubular, 5 mm long; pedicels 5 mm long; ovary 7 mm long; **sepals** yellow, suffused with red-brown, glabrous, the dorsal sepal broadly ovate, obtuse, deeply concave, 18-20 mm long, 17 mm wide, 11- to 13-veined, the lateral sepals connate into an ovate, obtuse synsepal, concave below the middle, 15 mm long, 11 mm wide; **petals** red, falcate, narrowly obtuse, fimbriate, 7 mm long, 2 mm wide, 3-veined; **lip** red, glabrous, transversely ovate, concave, 6 mm long, 6.5 mm wide, the disc with 2 pair of calli at the base, the base subtruncate, concave on the end, hinged to the column-foot; **column** stout, terete, 2 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COSTA RICA: Without locality, cultivated at Kew Gardens, 1920, obtained from *C.H. Lankester 192* (Holotype: K). **Alajuela**: Alfaro Ruiz, Palmira, alt. 2400 m, 27 Oct. 1938, *A. Smith H-1296* (AMES, K). **Heredia**: Vara Blanca, between Poás and Barba volcanoes, alt. 1740 m, Jan. 1938, *A.F. Skutch 3408* (AMES, K); Parqué Nac. Braulio Carrillo, Park Refugio, alt. 2100 m. 1 Nov. 1990, *S. Ingram & K. Ferrell-Ingram 660* (AMES, CR, K, MO, SEL, USJ), C. Luer illustr. 17043. **Guanacaste**: Volcán Tenorio, cultivated at Lankester Garden, 28 Dec. 1999, *M. Blanco 1062* (USJ). **Puntarenas**: Reserva Monteverde, Senderi Nuboso, Dec. 1984, *R.L. Dressler 218* (USJ). **Cartago**: Colorado, near Turrialba, ca. 1867, *A. Endres 549* (W); Cascajal, alt. 5,500 ft., July 1919, *C.H. Lankester 62* (K); PANAMA: **Chiriquí**: Fortuna dam site, alt. 1200 m, 7 Feb. 1985, *H. van der Werff & C. van Hardeveld 6619* (MO).

First collected by Endres half a century (ca. 1869) before it was sent to Kew by Lankester, *A. palliolata* is easily distinguished from other medium-sized, cordate-leaved species, by the large, not widely expanded flower with a deeply concave dorsal sepal, and a synsepal concave below the middle to accommodate the comparatively large lip. The falcate, fringed petals surround the lip. The lip is transversely ovate, concave, and with two pairs of basal calli.

Acronia pandurata (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *panduratus*, "violin-shaped," referring to the shape of the lip.

Bas.: *Pleurothallis pandurata* Luer & Hirtz, Lindleyana 11: 175, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 11-16 cm long, with a close, tubular sheath on the lower quarter and 2 other sheaths at the base. **Leaf** erect to suberect, coriaceous, ovate, acute, 6-8 cm long, 2.6-3.2 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a narrow spathe 7-9 mm long; peduncles 2-3 mm long; floral bracts tubular, 5-7 mm long; pedicels 8-10 mm long; ovary 5 mm long; **sepals** brown, glabrous, the dorsal sepal broadly elliptical, obtuse, 7.5 mm long, 5 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, acute synsepal, 6 mm long, 6 mm wide, 4-veined; **petals** browm, obliquely oblong, acute, 5 mm long, 1 mm wide, 1-veined; **lip** dark brown, panduriform, with minutely crenulate margins, 4 mm long, 3 mm wide below the middle, the apex broadly obtuse with a small callus beneath, the disc concave in the lower third above a conical, basal callus with a small glenion at the summit, and with a low pair of parallel calli on the middle third, the base subtruncate and flattened on the end, hinged to the column-foot; **column** stout, terete, 0.5 mm long, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, epiphytic in wet forest east of Los Encuentros, alt. 1650 m, 18 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13444* (Holotype: MO).

This species, found in the Cordillera del Condor in southeastern Ecuador, is distinguished by the medium habit with slender ramicauls that bear ovate, acute, cordate leaves. The flowers are not remarkably different from many others: an obtuse, three-veined dorsal sepal; an acute synsepal; and oblong, denticulate petals. The lip, however, is pandurate and concave on the lower third with a pair of low calli on the middle third, and a callus at the base with a small glenion at the summit.

Acronia pansamalae (Schltr.) Luer, comb. nov.

Ety.: Named for the Community of Pansamalá, Guatemala, near where the species was collected.
Bas.: *Pleurothallis pansamalae* Schltr., Repert. Spec. Nov. Regni Veg. 10: 354, 1912.
Syn.: *Zosterophyllanthos pansamalae* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-17 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect to spreading, coriaceous, narrowly ovate, acute, 5-8 cm long, 1.5-2.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a successive, single flower, subtended by a spathe 8-11 mm long at the base of the leaf; peduncles 2-3 mm long, within the spathe; floral bracts tubular, 2-4 mm long; pedicels 3-5 mm long; ovary 2-3 mm long; **sepals** translucent light brown or yellow-brown, glabrous, the dorsal sepal elliptical-ovate, obtuse, 3-3.5 mm long, 2-2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 3-3.5 mm long, 3-3.25 mm wide expanded, 4-veined; **petals** light red to rosy brown, oblong, acute, 2.5 mm long, 0.6-0.75 mm wide, 1-veined, the margins microscopically irregular; **lip** dull red to yellow suffused with brown, ovate-cordate, broadly obtuse, with minutely crenulate margins, 1.75 mm long, 1.75 mm wide, the apex broadly obtuse, minutely apiculate, the base cordate, deflexed below a glenion, concave on the end, hinged to the column-foot; **column** stout, 1 mm long, the foot thick, with the anther, rostellum and stigma apical.

GUATEMALA: **Alta Verapaz**: Pansamalá, alt. 3,800 ft., Oct. 1886, *H. von Türckheim 797* (Holotype of *A. pansamalae* destroyed at B; Lectotype here designated: US; Isotypes: AMES, BR, K); near Cobán, alt. 1350 m, Aug. 1912, *H. von Türckheim 3809* (M, W); same area, alt. 1350 m, Nov. 1907, *H. von Türckheim II 1538* (BR, US). **Baja Verapaz**: Purulhá, between El Progresso and Cobán, alt. 1620-1720 m, 26 Jan. 1967, *T.B. Croat & D.A. Hannon 63733* (MO). **Izabal**: Montañas del Nico, west of Santo Tomás de Castilla, alt. 600 m, 19 Aug. 1988, *W.D. Stevens et al. 25580* (MO).
BELIZ: **Cayo**: Southern Mayo Mts., vicinity of Doyle's Delight, alt. 1000 m, 8 Dec. 1993, *A. Allen 15289* (MO).
HONDURAS: **Comayagua**: Siguatepeque, El Achote, alt. 3,900 ft., 28 Sept. 1932, *J.B. Edwards 268* (AMES); same locality, alt. 1800 m, 1 Aug. 1936, *T.G. Yuncker et al. 6248* (K).

This Guatemalan and Honduran species is characterized by the narrowly ovate leaf and a small, brownish flower with obtuse sepals about three millimeters long. The lip is less than two millimeters long and broad. It is broadly ovate and cordate, deflexed below the middle, and held against the undersurface of the column.

The description and distribution given by Ames and Correll in *Orchids of Guatemala*, 1953, pp. 243, 244, probably include *A. phyllocardioides*, which they had not considered.

Acronia paquishae (Luer) Luer, comb. nov.

Ety.: Named for the region of Paquisha in southeastern Ecuador where this species was collected.
Bas.: *Pleurothallis paquishae* Luer, Lindleyana 11: 176, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-15 cm long, with a close, tubular sheath on the lower quarter and 2 other sheaths at the base. **Leaf** spreadinf or horizontal, coriaceous, ovate, acute, 4.5-7.5 cm long, 3-3.5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a narrow spathe 6-8 mm long; peduncles 2-3 mm long; floral bracts tubular, 5-8 mm long; pedicels 5-8 mm long; ovary 3-4 mm long; **sepals** green, suffused with red-brown along the veins, glabrous, the dorsal sepal narrowly elliptical, acute, 11 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 11 mm long, 6 mm wide, 4-veined; **petals** red-brown, expanded, narrowly linear-oblong, acute, minutely serrulate, 9.5 mm long, 1 mm wide, 1-veined; **lip** deep velvety red, ovate, obtuse, minutely spiculate, denticulate, 5.5 mm long, 2.5 mm wide, the disc slightly convex and very shallowly channeled, with a small glenion at the base, the base subtruncate and narrowly flattened on the end, hinged to the column-foot; **column** stout, semiterete, flattened, 1 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, epiphytic in wet forest near the Paquisha military camp, alt. 1600 m, 1987, *F L Stevenson 89-1217-5* (Holotype: MO), C. Luer illustr. 16318. **Napo**: above Archidona, alt. ca. 1500 m, July 1975, *C. Luer, G. Luer & S. Wilhelm 516* (SEL).
PERU: **Amazonas**: Chachapoyas, Pampa del Tio, between Quitachi and Las Tinas, alt. 2000 m, 5 July 1991, *C. Diaz et al. 4589* (MO). **Loreto**: Pumayacu, between Balsapuerto and Moyobamba, alt. 600-1200 m, Aug.-Sept. 1933, *G. Klug 0114* (MO).

This species is known from the Cordillera del Condor of southeastern Ecuador and adjacent Peru. It is similar to many other species characterized by a more or less horizontal, ovate, acute leaf deeply cordate at the base. The flower is borne on top of the leaf. The sepals are acute, the dorsal narrow and three-veined; the widely spread, proportionately long, narrow petals are minutely denticulate; and the lip is ovate, obtuse and minutely spiculate with a small glenion at the base.

Acronia peculiaris (Luer) Luer, comb. nov.

Ety.: From the Latin *peculiaris*, "peculiar," in allusion to the unusual features for the section.
Bas.: *Pleurothallis peculiaris* Luer, Selbyana 3: 158, 1976.
Syn.: *Zosterophyllanthos peculiaris* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a long, tubular sheath below the middle and 2-3 shorter sheaths at the base, 15-38 cm long. **Leaf** acutely deflexed, dull green, indistinctly spotted with purple, coriaceous, narrowly cordate-ovate, acuminate and curved up above the middle to the acute apex, 12-15 cm long, 3-3.75 cm wide, the base sessile, deeply cordate with the lobes incurved. **Inflorescence** a fascicle of solitary, successive, non-resupinate flowers borne from an erect to suberect, conduplicate spathe, 11-15 mm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 5-6 mm long; pedicels 10-12 mm long; ovary 7 mm long; **sepals** dark red, cellular-glandular, long-pubescent toward the margins, the middle sepal broadly ovate, obtuse, 9 mm long, 8 mm wide, 3-veined, the lateral sepals connate into an oblong-obovate synsepal with the apex rounded, 8 mm long, 5 mm wide, 4-veined, with the sides recurved; **petals** dark red, long-pubescent, widely expanded, obovate-spathulate, obtuse, 6 mm long, 3.5 mm wide, 3-veined; **lip** dark red, thick, transversely subtriangular-trilobed, 3.5 mm long, 5 mm wide, the apex rounded, minutely erose, the lateral angles acute, below the middle, the disc sparsely verrucose centrally with a bifid callus at the base, the base deflexed, flattened on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot 2 mm long.

PANAMA: **Veraguas**: epiphytic in cloud forest near the continental divide above Santa Fe, alt. ca. 700 m, 5 Sept. 1976, *C. Luer & R.L. Dressler 1142* (Holotype: SEL). **Coclé**: above El Potroso sawmill, north of Copé, alt. 1200-1300 m, 13 May 1981 *K. Sytsma & L. Andersson 4562* (MO).

Closely related to the Ecuadorian *Acronia troglodytes*, this species is apparently endemic in central Panama. *Acronia peculiaris* is characterized by the acutely deflexed, purple-mottled, narrow, acuminate, incurved leaf that is deeply cordate at the base. The dark red flower is exserted from an erect spathe. The obtuse sepals and the spathulate petals are long-pubescent near the margins. The lip is transversely trilobed with the lateral lobes acute and below the middle, and with the middle lobe rounded and verrucose with minutely erose margins.

Acronia pelicophora (Luer) Luer, comb. nov.

Ety.: From the Greek *pelicophora*, "bowl-bearing," referring to the concave lip.
Bas.: *Pleurothallis pelicophora* Luer, Rev. Soc. Bol. Bot. 3: 57, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-15 mm long, with a tubular sheath on the lower quarter and 2 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, 4.5-6 cm long, 2.3-2.7 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a narrow spathe 6-7 mm long; pedunc les 12-15 mm long; floral bracts tubular, 3 mm long; pedicels 5 mm long; ovary 3.5 mm long; **sepals** translucent tan, glabrous, the dorsal sepal ovate, subacute, 6.5 mm long, 3.75 mm wide, 5-veined, the lateral sepals connate into an ovate, obtuse synsepal, 6 mm long, 4.5 mm wide, 4-veined; **petals** tan, glabrous, linear-oblong, acute, 6 mm long, 1 mm wide, 3-veined; **lip** purple, glabrous, ovate, subacute, concave, 3.25 mm long, 2.5 mm wide, the disc concave, smooth, with a faint glenion at the base, the base transversely thickened, flat on the end, subtruncate, articulated with the column-foot; **column** stout, terete, 1 mm long and wide, the foot thick, obsolescent, with the anther and stigma apical.

ECUADOR: **El Oro**: without more specific locality, cultivated by J & L Orchids 8 May 1996, *C. Luer, 17868* (Holotype: MO).

This species is known from a single collection in southwestern Ecuador. Vegetatively, it is not distinct, nor are the ovate dorsal sepal and synsepal, and the linear-oblong petals, but the lip is like no other in the section. It is held erect from the center of the flower by an articulation between the stout base of the column, or the rudimentary foot, and the base of the lip. The lip is ovate, subacute, concave, and smooth, with the base transversely thickened to form the flat end that fits snugly against the rudimentary column-foot.

Acronia penelops (Luer) Luer, comb. nov.

Ety.: From the Greek *penelops*, "a kind of duck," in allusion to the appearance of the flowers.

Bas.: *Pleurothallis penelops* Luer, Selbyana 2: 387, 1978.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a tubular sheath below the middle and 2-3 shorter sheaths at the base, 8-16 cm long. **Leaf** acutely deflexed, coriaceous, narrowly cordate-ovate, acuminate and curved up above the middle to the acute apex, 8-12 cm long, 1.5-2 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of solitary, successive, resupinate flowers borne from an suberect to declining, conduplicate spathe, 12-15 mm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 7-10 mm long; pedicels 7-10 mm long; ovary 5 mm long; **sepals** dark purple, acutely reflexed, the dorsal sepal glabrous, broadly elliptical, obtuse, 10 mm long, 8 mm wide, 5-veined, the lateral sepals cellular-glandular, connate into a broadly elliptical, obtuse synsepal with revolute sides, 8 mm long, 7 mm wide expanded, 4-veined; **petals** dark purple, glabrous with minutely serrulate margins, acutely reflexed, ovate, obtuse, subunguiculate, 9 mm long, 3 mm wide, 3-veined; **lip** dark purple, thick, protruding, ovoid, 5.5 mm long, 4 mm wide, the apex rounded, the disc shallowly channeled above a basal glenion, cellular-papillose centrally, the base white, unguiculate, hinged to the column-foot; **column** white, stout, 1.5 mm long, 1.5 mm broad, the anther and bilobed stigma apical, the foot obsolescent.

ECUADOR: **Morona-Santiago**: epiphytic in cloud forest east of Paute toward the dam site, alt. 1700 m, 10 July 1977, *C. Luer, J. Luer, G. Luer & A. Andreetta 1659* (Holotype: SEL); epiphytic in forest around Campamento Guarumales, alt. 1650 m, 24 Mar. 1991, *C. Luer, J. Luer, A. Andreetta & L. Morocho 15241* (MO).

Closely related to *Acronia cardiostola*, this species is apparently endemic in the Paute valley in southeastern Ecuador where it is not uncommon. It is identified by the deflexed, narrowly cordate leaf that curves up beyond the middle; a deflexed spathe; and a dark purple flower with acutely reflexed sepals and petals, and a protruding lip and white column.

Acronia perijaensis (Dunst.) Luer, comb. nov.

Ety.: Named for the Sierra de Perijá where the species was discovered.

Bas.: *Pleurothallis perijaensis* Dunst., Selbyana 2: 210, 1978.

Syn.: *Zosterophyllanthos perijaensis* (Dunst.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a tubular sheath below the middle and 2-3 shorter sheaths at the base, 12-30 cm long. **Leaf** acutely deflexed, coriaceous, narrowly cordate-ovate, curved up above the middle to the acute apex, 12-22 cm long, 2-5 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of solitary, successive, resupinate flowers borne from a erect, conduplicate spathe, 1-2 cm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 7-10 mm long; pedicels 5-7 mm long; ovary 5 mm long, verruculose; **sepals** brownish, heavily suffused with dark purple, cellular-glandular, the dorsal sepal broadly ovate, obtuse, 11-16 mm long, 8-12.5 mm wide, 7-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal with revolute sides, 12-17 mm long, 8-14 mm wide expanded, 6-veined; **petals** dark purple, cellular-glandular with minutely serrulate margins, acutely reflexed, ovate, acute, subunguiculate, 7-9 mm long, 3-6 mm wide, 3-veined; **lip** purple to white, thick, protruding, ovoid, 5-7 mm long, 4.5-6 mm wide, the apex rounded, the disc coarsely verrucose with verrucose margins, the verrucae arranged more or less in longitudinal rows, with a subconical callus at the base, the base subunguiculate, hinged to the column-foot; **column** purple, stout, 2.5 mm long, 4 mm broad, the anther and bilobed stigma apical, the foot obsolescent.

VENEZUELA: **Zulia**: epiphytic in low positions on trunks of cloud-forest trees in the Sierra de Perijá on the trail from Pishicacao to the Colombian border, alt. ca. 1550 m, March 1972, *J.A. Steyermark, G.C.K. & E. Dunsterville 105666* (Holotype: VEN; Isotype: AMES).
COLOMBIA: **Norte de Santander**: forest between Chinacota and Ragonvalia, alt. 2050 m, 9 May 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7778* (SEL).
ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, east of Paquisha, alt. 1200 m, 23 Jan. 1992, *C. Luer, J. Luer, A. Jesup, P. Jesup & A. Hirtz 16121S* (MO).

This species is apparently rare, but widely distributed from western Venezuela to southeastern Ecuador. It is characterized by the deflexed, narrowly cordate leaf that curves up beyond the middle; an erect, foliaceous spathe; and a dark purple flower with reflexed petals, and a markedly verrucose, protruding lip.

Acronia peroniocephala (Luer) Luer, comb. nov.

Ety.: From the Greek *peroniocephalus*, "pin-headed," referring to the minute flowers.
Bas.: *Pleurothallis peroniocephala* Luer, Selbyana 1: 262, 1975.

Syn.: *Zosterophyllanthos peroniocephala* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls suberect, slender, 2-6 cm long, enclosed below the middle by a closely appressed, tubular sheath and another 1-2 sheaths at the base. **Leaf** more or less suffused with purple, spreading, thickly coriaceous, rigid, concave, ovate, acute, 25-33 mm long, 15-21 mm wide, the base sessile, deeply cordate with the lobes overlapping. **Inflorescence** a single, successive flower, sometimes several produced simultaneously, subtended by a spathe 4-6 mm long on top of the leaf; peduncle ca. 1 mm long; floral bracts thin, tubular, 3-4 mm long; pedicels 2-4 mm long; ovary 1-2 mm long; flowers very small, rose-brown or purple; **sepals** glabrous, the dorsal sepal broadly ovate to orbicular, obtuse, concave, 2.5 mm long, 1.75 mm wide, 2.5 mm wide expanded, 3-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 2-2.5 mm long, 2.5 mm wide, 4-veined; **petals** red, entire, falcate-oblong, acute, 2-2.5 mm long, 0.5 mm wide, 1-veined; **lip** rose, thick, entire, ovate-oblong, obtuse, 1-1.25 mm long, 0.6-0.75 mm wide, the disc thickened centrally, without a visible glenion, the base subcordate-truncate, hinged on the end to the column-foot; **column** erect, stout, terete, 0.5 mm long, 0.8 mm broad, the foot thick, obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: terrestrial on the road embankment between Loja and Zamora, alt. 1000 m, 5 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 401* (Holotype: SEL); same area, alt. 1750 m, 18 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 3765* (AAU); same area, alt. 1600 m, 8 Aug. 1958, *C. Dodson 235* (SEL); same area, Dos Hermanos, alt. 1600 m, Aug. 1985, *D. D'Alessandro 508* (MO); Retorno, above Río Zamora, 16 Apr. 1980, *D. Dalessandro 55-005* (SEL). **Tungurahua**: west of Río Verde, alt 1570 m, 27 July 1971, *S. MacBryde 663* (SEL).
PERU: **Huánuco**: Río LlullaPichas, ascent of Cerros del Cira, alt. 1500 m, 30 July 1969, *T. R. Dudley 13503* (NA), C. Luer illustr. 18593. **Pasco**: Oxapampa, epiphytic in elfin forest above Villa Rica, alt. 1770 m, 13 Dec. 1987, *D. Bennett & M. Chase 4066* (MO), C. Luer illustr. 16630.

This small species is found locally in southeastern Ecuador and neighboring Peru. A few tiny, brownish, suborbicular flowers are borne at the base of a horizontal, rigidly concave, deeply cordate leaf. The dorsal sepal and synsepal are broadly ovate, concave and obtuse; the red petals are entire, subfalcate and acute; and the minute lip, smaller than the column, is oblong-ovate. The callus on the center of the lip noted in the original description is reduced to a low, indistinct callus in other specimens. The base of the lip, without any deflexion, is attached on the end directly to the thick base of the column.

Acronia perryi (Luer) Luer, comb. nov.

Ety.: Named in honor of Richard Perry, M.D. of St. Petersburg, FL, co-discoverer of this species.
Bas.: *Pleurothallis perryi* Luer, Selbyana 5: 174, 1979.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a long, tubular sheath below the middle and 2-3 shorter sheaths at the base, 20-35 cm long. **Leaf** deflexed, coriaceous, cordate-ovate, 9-16 cm long, 3-6 cm wide, the apex acute, the base deeply cordate,

sessile. **Inflorescence** a fascicle of solitary, successive, non-resupinate flowers borne from a reclining to suberect, conduplicate spathe, 10-15 mm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 5 mm long; pedicels 10-11 mm long; ovary 4-5 mm long; **sepals** green with rose to purple-brown veins, long-ciliate, the middle sepal broadly ovate, obtuse, 6.5-11 mm long, 6.5-11 mm wide, 9-veined, the lateral sepals connate into a transversely ovate, rounded synsepal, 7-10 mm long, 8-11 mm wide, 12-veined; **petals** colored as the sepals, cellular-pubescent, ciliate, obovate, obtuse, 4-6.5 mm long, 3-4 mm wide, 3-veined; **lip** brown to purple with yellow margin, transversely ovate-triangular, 3.5-4 mm long, 3.75-5 mm wide, the apex obtuse, the basal angles subacute, erect, the disc lightly convex above the middle, lightly concave and verrucose below the middle on either side of a glenion, the base narrowly flattened on the end, hinged to the column-foot; **column** stout, 1 mm long, 2.5 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

ECUADOR: **El Oro**: epiphytic in orange tree 10 Km west of Piñas, alt. 900 m, 6 Aug. 1979, *C.H. Dodson, H. & P. Morgan, A. & R. Perry 8634* (Holotype: SEL), C. Luer illustr. 4125; cloud forest south of Piñas, alt. 950-1000 m, 20 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10662* (MO). **Cañar**: betweem Duran and Tambo, alt. 900 m, 2 July 1960, *C.H. Dodson 118* (SEL). **Azuay**: east of Jesus Maria near border with Cañar, alt. 780 m, 12 April 1980, *A. Gentry, C. Bonifaz & R. Horna 28507* (MO, SEL); Cordillera del Molleturo, above Río Shumiral, alt. 1100 m, 27 Jan. 1992, *C. Luer, J. Luer, A. Jesup, P. Jesup & A. Hirtz 16188* (MO).

This species is apparently endemic at relatively low altitudes in southeastern Ecuador. In habit it is most similar to *Acronia cardiostola* with large, cordate leaves and a conspicuous, more or less erect, foliaceous spathe. The flowers are superficially similar to those of *A. troglodytes*. *Acronia perryi* is distinguished by striped, long-ciliate sepals; broadly obovate, obtuse, ciliate petals; and a transversely cordate-ovate lip.

Acronia persimilis (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *persimilis*, "very similar," referring to the similarity to *A. coriacardia* Rchb.f.

Bas.: *Pleurothallis persimilis* Luer & Hirtz, Orquideología 22: 268, 2003.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-17 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly linear-ovate, acute, 8-13 cm long, 1.5-2 cm wide, the base sessile, rounded, shallowly cordate. **Inflorescence** a single, successive flower, borne from a narrow spathe 5-7 mm long at the base of the leaf; peduncles 3-4 mm long within spathe; floral bracts tubular, 7-8 mm long; pedicels 10 mm long; ovary 4 mm long; **sepals** sepals brown, the dorsal with wide, purple-brown veins, microscopically ciliate, glandular-cellular, the dorsal sepal elliptical, acute, acuminate, 13 mm long, 6 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 13 mm long, 6 mm wide, 4-veined; **petals** brown, narrowly oblong-triangular, acute, minutely denticulate, 8 mm long, 1.5 mm wide, 1-veined; **lip** brown, oblong, obtuse, convex, cellular-verrucose, 6.5 mm long, 3 mm wide, with a small glenion at the base, the base subtruncate, concave on the end, hinged to the base of the column; **column** stout, 1.5 mm long, 1 mm wide, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **El Oro**: forest above Zaruma, alt. 1800 m, 1 Feb. 1987, *C. Luer, J. Luer & A. Hirtz 12563* (Holotype: MO).

The flower of this graceful species of southwestern Ecuador resembles one of *Acronia coriacardia*, but the petals are elongate and longer than the lip. No other collection has been seen. Vegetatively, it is slender with a narrowly ovate leaf. The sepals are brown, acute and microscopically cilate. The petals are narrow, acute and denticulate, and the lip is oblong and covered with minute verrucae.

Acronia phyllocardia (Rchb.f.) Luer, comb. nov.

Ety.: From the Greek *phyllocardia*, "a heart-like leaf," in reference to the shape of the leaf.

Bas.: *Pleurothallis phyllocardia* Rchb.f., Beitr. Orchid. Centro. Amer. 97, 1866.

Syn.: *Pleurothallis triangulabia*, C.Schweinf., Ann. Missouri Bot. Gard. 24: 183, 1937.

Ety.: From the Latin *triangulabius*, "with a triangular lip," in reference to the lip.

Syn.: *Zosterophyllanthos phyllocardius* (Rchb.f.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a long, tubular sheath below the middle and 2-3 shorter sheaths at the base, 12-30 cm long. **Leaf** deflexed, coriaceous, broadly cordate-ovate, more or less concave, 7-16 cm long, 3.5-7 cm wide, the apex acute, the base deeply cordate with overlapping lobes, sessile. **Inflorescence** a fascicle of solitary, successive, non-resupinate, dark purple flowers borne from a suberect, conduplicate spathe, 2-2.5 cm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 3-5 mm long; pedicels 10-15 mm long; ovary 6-7 mm long; **sepals** glabrous, the middle sepal ovate, acute, 12-15 mm long, 8-9 mm wide, 3-veined, the lateral sepals connate into an ovate synsepal, 10-15 mm long, 7-8 mm wide, 4-veined; **petals** oblong, acute, minutely denticulate, 7-10 mm long, 2-2.5 mm wide, 1-veined; **lip** red-purple, ovate-triangular, 3.5 mm long, 3.5 mm wide, the apex obtuse, the basal angles subacute, the disc cellular-papillose above the middle, lightly concave below the middle on either side of a glenion, the base narrowly flattened on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

COSTA RICA: **Alajuela**: Desengaño, 31 May 1858, *H. Wendland 973* (Holotype: W). Without locality, alt. 7,000 ft., ca. 1867, *A. Endres 189, 383* (W). **Cartago**: Alfaro Ruiz, Palmira, alt. 840 m, 4 July 1925, *A.M. Brenes 138a* (holotype of *A. triangulabia*: AMES); same locality, alt. 2300 m, 16 July 1938, *A. Smith H-932* (AMES, K). **Heredia**: Volcán Poás, above Poasito, alt. ca. 2000 m, 12 Sept. 1979, *C. Luer, J. Luer, K.S. Walter & C. Todzia 4133* (K, SEL); Atlantic slope of Volcán Barva, alt. 700 m, 5 Apr. 1986, *M.H. Grayum & C. Jermy 6791* (MO); border between Alajuela and Puntarenas, near TV tower, alt. 1700 m, 24 June 1989, *J.T. Atwood 89-239* (K, SEL). **Puntarenas**: Monteverde, road to TV tower, alt. 1700 m, 24 Aug. 1985, *W.A. Haber 2350* (MO); Coto Brus, La Amistad Biosphere Reserve, alt. 1450-2100 m, 8 July 1994, *J. Kress & G. Romero 94-4185* (USJ). **San José**: west of La Sierra towards San Cristobal, alt. 1800 m, 21 July 1980, *J.M. MacDougal 819* (DUKE, MO); Cerro Chiripo, sendero al refugio, alt. 2100 m, 1 May 1993, *T. Dumbeck s.n.* (USJ). **Limón**: Talamanca, canyon of Río Siní, alt. 1800-1900 m. 15 Sept. 1984, *G. Davidse & G. Herrera 29171* (MO).
PANAMA: **Chiriquí**: valley of the upper Río Chiriquí Viejo, vicinity of Monte Lirio, alt. 1300-1900 m, 27 June-13 July 1935, *R.J. Seibert 269* (K, MO); trail from Cerro Punta to headwaters of Río Caldera, alt. 2250-2500 m, 14 Jan. 1939, *P.H. Allen 1468* (MO); Bajo Grande above Cerro Punta, alt. 2200 m, 10 Sept. 1976, *C. Luer & H. Butcher 1178* (SEL); above Guadalupe, alt. 2500 m, 13 Sept. 1976, *C. Luer & H. Butcher 1209* (SEL); Cerro Pando, near Costa Rican border, alt. 2000-2400 m, 20 July 1975, *S. Mori & A. Bolten 7286* (MO).

This species is known from Costa Rica where it was first collected by Wendland in the middle of the last century, and western Panama where it is locally common. Related to the Andean *Acronia cardiostola*, *A. phyllocardia* is characterized by an acutely deflexed, deeply cordate leaf; a dark purple flower emerging from an erect spathe and commonly facing downward. The sepals are acute; the petals are most commonly narrowly oblong; and the lip is transversely triangular and obtuse with the lateral angles subacute. The disc is cellular-papillose above the middle and shallowly concave below the middle to either side of the glenion.

Acronia phyllocardioides (Schltr.) Luer, comb. nov.

Ety.: Named for a fancied resemblance to *Pleurothallis phyllocardia* Rchb.f., a much larger plant with much larger flowers.

Bas.: *Pleurothallis phyllocardioides* Schltr,, Repert. Spec. Nov. Regni Veg. Beih. 19: 193, 1923.

Syn.: *Pleurothallis acostaei* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 285, 1923.
Ety.: Named in honor of Guillermo Acosta who collected this species.

Syn.: *Pleurothallis rhaphidopus* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 54, 1923.
Ety.: From the Greek *rhaphidopus*, "raphid-footed," probably referring to the ramicaul.

Syn.: *Pleurothallis graciliscapa* C.Schweinf., Bot. Mus. Leafl. 15: 93, 1951.
Ety.: From the Latin *graciliscapus*, "with slender scape," referring to the ramicaul.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-15 cm long, with a close, tubular sheath on the lower half and 2 other sheaths at the base. **Leaf** spreading, coriaceous, ovate, acute, 3-7 cm long, 1.2-4 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single, yellow-green, occasionally brown to purple, flowers, borne on top of the leaf, subtended by a narrow spathe 4-7 mm long; peduncles 1-2 mm long within the spathe; floral bract tubular, 4-5 mm long; pedicel 5 mm long; ovary 2 mm long; **sepals** glabrous, the dorsal sepal broadly elliptical-ovate, subacute to obtuse, 3-5 mm long, 2-3 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 3-5 mm long, 2-3 mm wide, 4-veined; **petals** narrowly triangular, acute, often microscopically

denticulate, 2-3 mm long, 0.5-0.8 mm wide, 1-veined; **lip** cordate-ovate, obtuse, often with minutely irregular margins, 1.5-2 mm long, 1.5-1.8 mm wide, the disc flat to slightly convex, with a glenion at the base, the base subcordate, narrowly flattened on the slightly deflexed base, hinged to the column-foot; **column** semiterete, 0.5 mm long, 1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

Representative collections:
COSTA RICA: **Alajuela**: Haies, near San Ramón, alt. 1025 m, June 1922, *A.M. Brenes 290* (Holotype of *A. phyllocardioides* destroyed at B; fragment: AMES 56387, illustr. of type); vicinity of San Ramón, 1921, *G. Acosta s.n.* (holotype of *A. acostaei* destroyed at B; lectotype here desinated: AMES 56388, illustr. of type); La Palma de San Ramón, alt. 1000 m, 12 June 1923, *A.M. Brenes 603* (AMES). **Cartago**: vicinity of Orosi, 30 Mar. 1924, *P.C. Standley 39687* (AMES); Taos, 11 Dec. 1964, alt. 1000 m, *R.L. Dressler 340* (USJ). **Heredia**: Río Sarapiquí, near Cariblanco, alt. 850 m, 24 Apr. 1956, *L.O. Williams 20247, 20329* (EAP, SEL). **San José**: Reserva Biológica Carara, alt. 500-600 m, 24 Apr. 1988, *M. Grayum & J. Kress 8578* (CR, MO). **Puntarenas**: Peninsula de Osa, Cerro Chocuaco, alt 250-300 m, 16 Nov. 1993, *Morales 739* (USJ). **Limón**: Talamanca, ridge between Quebrada Cañabral and Río Barbilla, alt. 200-400 m, 4 Sept. 1988, *M. Grayum, G. Herrera & R. Robles 8763* (CR, MO). Without locality, ca. 1867, *A. Endres 54* (W).
NICARAGUA: **Chontales**: Cerro El Chamarro, alt. 675 m, *A. Heller 6522* (SEL).
GUATEMALA: San Marcos, Rafael de Cuesta, Finca Armenia, alt. ca. 5,000 ft., 6 July 1977, *J.D. Dwyer 14469* (MO). **Baja Verapaz**: near Union Barrios, alt. 1600 m, 25 Feb. 1981, *C. Luer, J. Luer, M. & M. Dix 5882* (SEL).
PANAMA: **Chiriquí**: San Vicente, between Volcán and Concepción, alt. 500 m, 11 Sept. 1976, *C. Luer & H. Butcher 1196* (SEL). **Bocas del Toro**: above Chiriquí Grande, alt. 350 m, 17 Feb. 1985, *C. Luer, J. Luer, R. Dressler & K. Dressler 10608* (MO). **Panama**: Cerro Jefe, 16 Dec. 1967, *R.L. Dressler 3241* (SEL).
COLOMBIA: **Antioquia**: Yarumal, alt. 2750 m, 12 Sept. 1984, *C.H. Dodson, R. Escobar & E. Valencia 1526* (MO). **Valle del Cauca**: Bajo Calima, north of Buenaventura, alt. 50 m, 11 Apr. 1987, *A. Gentry et al. 56778* (MO). **Nariño**: Mulado, Mocoa, alt. 530 m, June 1921, *W. Hopp 83* (holotype of *P. rhaphidopus* destroyed at B).
VENEZUELA: Guatopo, July 1955, alt. ca. 2,000 ft., *G.C.K. Dunsterville 482*.
ECUADOR: **Carchi**: plateau above San Marcos de los Coaiqueres, alt. 1000 m, 7 Feb. 1985, *B. Øllgaard et al. 57497* (AAU, QCA). **Esmeraldes**: west of Lita, alt. 700 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz et al. 12360, 12362* (MO). **Pichincha**: Centenela, Montañas de Ila, alt. 550-650 m, 10 July 1979, *B. Løjtnant & U. Molau 15845* (AAU, QCA). **Cotopaxi**: in citrus grove between Quevedo and Latacunga, alt. ca. 600 m, 5 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 2954, 2966* (AAU). **Pastaza**: Mera, alt. ca. 1100 m, 23 Mar. 1956, *E. Asplund* (S). **Napo**: Bermejo oil fields, alt. 850 m, 9 Feb. 1986, *C. Luer, J. Luer, A. Hirtz et al. 11726* (MO). **Morona-Santiago**: Misión Bomboiza, alt. ca. 800 m, 23 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 4237* (AAU, S). **Zamora-Chinchipe**: Cordillera del Condor, east of Paquisha, alt. 1200 m, 23 Jan. 1992, *C. Luer, J. Luer, A. Hirtz et al. 16133* (MO).
PERU: **Amazonas**: Bagua, Imaza, Nuevo Samaria, alt. 700 m, 18 Mar. 1995, *C. Díaz et al. 7566* (MO). **Huánuco**: near Tingo Maria, alt. 670 m, 29 Oct. 1948, *J.B. Carpenter 103* (holotype of *P. graciliscapa*: AMES); Leoncio Prado, Rupa Rupa, Jacintillo, alt. 700 m, 13 July 1978, *J. Schunke 10357* (F, MO, SEL). **San Martín**: Lamas, Alonso de Alvarado, road to Moyobamba, alt. 900 m, 12 Apr. 1973, *J. Schunke 5905* (NY, SEL). **Pasco**: between La Merced and Oxapampa, alt. 1400 m, 30 Jan. 1979, *C. Luer & J. Luer 3812* (SEL).
BOLIVIA: **La Paz**: Muñecas, along Río San Cristóbal near Consata, alt. 1200 m, 22 Jan. 1981, *C. Luer, J. Luer & R. Vásquez 5706* (SEL). **Cochabamba**: Chapare, northeast of Cochabamba toward Villa Tunari, alt. 1000 m, 16 Jan. 1988, *C. Luer, J. Luer, R. Vásquez et al. 12852* (MO).

This species-complex is one of the most frequent and most widely distributed taxa of the genus. It is found in Central America from Guatemala through Panama, and throughout the Andes, but neither in the Antilles nor Brazil. It is strange that it did not acquire a name before 1922, but the insignificant habit and small flower apparently did not interest the early collectors or authors. Specimens sent to Reichenbach in the last century, ca. 1869, by Endres from Costa Rica were neglected among numerous others. Ames and Correll did not consider this species for *Orchids of Guatemala*, 1952, so no doubt collections of it are mixed within the citations listed for other species, such as *A. pansamalae*.

Two collections of this species from the same area in Costa Rica by different collectors were described simultaneously by Schlechter in 1923. *Acronia phyllocardioides* appeared in part III of the Additamenta to the *Orchideenkunde von*

Zentralamerika, 1923, p. 193, and *A. acostaei* appeared in part IV, p. 285. As can be expected, this common, widely distributed species with about the simplest of features is morphologically variable. Three variations were included in a composite illustration by Dunsterville that was identified as *P. tridentata* [=*A. tridentata*] in *Venezuelan Orchids Illustrated* (2: 306, 1961).

Slender ramicauls bear a small, cordate leaf at the base of which a succession of small, yellow, widely expanded flowers is produced. The sepals are less than five millimeters long and the petals are usually about half as long, and less than a millimeter wide at the base. The lip is ovate and obtuse, usually about two millimeters long and about a millimeter and a half wide. A glenion is present at the base.

Specimens from the Occidente of Ecuador are more similar to those of Central America than are some of those from the Oriente of Ecuador, Peru, or Bolivia, that have slightly larger flowers and a slightly larger lip. Schweinfurth did not consider it when he described *P. graciliscapa* [=*A. graciliscapa*], which often does not have a proportionately long ramicaul.

Acronia phymatodea (Luer) Luer, comb. nov.

Ety.: From the Greek *phymatodes*, "warty," referring to the floral parts.
Bas.: *Pleurothallis phymatodea* Luer, Selbyana 3: 170, 1976.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 3-10 cm long, with a loose, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading to horizontal, thickly coriaceous, ovate, acute, concave centrally between convex halves, 3-7 cm long, 2-4 cm wide, the base sessile, deeply cordate with overlapping lobes. **Inflorescence** a fascicle of single, non-resupinate, successive flowers, subtended by a spathe 8-11 mm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts tubular, 5 mm long; pedicels verrucose, 7-10 mm long; ovary verrucose, 2-3 mm long; **sepals** thickly fleshy, verrucose, blackish purple, the middle sepal broadly ovate to orbicular, 4-5 mm long, 4-5 mm wide, 3-veined, the lateral sepals connate into a transversely ovate, obtuse, concave synsepal, 3-4 mm long, 5-6 mm wide, 6-veined; **petals** purple-black, thick, oblong, obtuse, verrucose, 2.2 mm long, 0.8 mm wide, 1-veined; **lip** purple-black. thick, ovoid, obtuse, 2 mm long, 2 mm wide, rounded at the apex with slightly verrucose margins, the disc with a well-defined, circular, central cavity, the base with a pair of rounded calli, subtruncate, concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: Tungurahua: epiphytic near Río Blanco east of Baños, alt. 1800 m, 18 Mar. 1976, *C. Luer, J. Luer & P. Taylor 890* (Holotype: SEL); along cliff-face between Río Blanco and Río Verde, alt. 1800 m, 7 Jan. 1961, *C. Dodson & L. Thien 1961* (SEL). Pastaza: north of Puyo, 21 Mar. 1976, *C. Luer, J. Luer & P. Taylor 933* (SEL).

This species is apparently endemic in lowland, eastcentral Ecuador. It is characterized by heavy, thickly coriaceous, horizontal, cordate leaves with a small, blackish purple, non-resupinate flower. The obtuse sepals and incurved petals are densely verrucose. The lip is thick with a deep, central cavity.

Acronia pileata (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *pileatus*, "with a cap," referring to the cucullate dorsal sepal.
Bas.: *Pleurothallis pileata* Luer & R.Escobar, Orquideología 15: 142, 1982.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 13-25 cm long, with a tightly fitting tubular sheath below the middle, and another at the base. **Leaf** spreading, coriaceous, cordate-ovate, acute, acuminate, 4.5-6.5 cm long, 3-3.5 cm wide, sessile, deeply cordate at the base. **Inflorescence** a solitary flower produced successively, borne by a suberect peduncle 3 mm long, concealed within a reclining spathe 9-12 mm long; pedicel 5 mm long; floral bract 5 mm long; ovary 4 mm long; **sepals** translucent green, suffused with rose along the veins and at the apex, glabrous, the dorsal sepal ovate, obtuse, deeply concave, 8 mm long, 6 mm wide, 8 mm wide expanded, 5-(7-)veined, the lateral sepals connate into a flat, ovate, obtuse lamina, 7 mm long, 4.5 mm wide, 4-veined; **petals**

dull yellow, suffused with rose basally, elliptical-subfalcate, arcuate, oblique, acute, 5.75 mm long, 2 mm wide, 3-veined; **lip** red below the middle, three-lobed, arcuate, 4 mm long, 2.5 wide, 4 mm wide across the basal lobes expanded, the anterior lobe purple-black, cellular-glandular, ovate, obtuse, minutely apiculate, with microscopically erose margins, the basal lobes erect, broadly falcate, acute, antrorse, the disc with a glenion at the base, the base hinged to the column-foot; column semiterete, 2.5 mm long, with the anther subapical and the stigma entire, ventral, foot thick, pedestal-like.

COLOMBIA: **Chocó**: epiphytic in forest near San José del Palmar, alt. 600-800 m, collected by L. & J. Posada, cultivated at Colomborquídeas, 20 Nov. 1981, *C. Luer 6723* (Holotype: SEL). **Valle del Cauca**: El Cairo, Cerro del Inglés, Sarranía de los Paraguas, alt. 2300 m, 3 Jan. 1987, *P. Silverstone, N. Paz, R. T. González, I. Cabrera & D. Garcés 2917* (CUVC, MO).

This species is characterized by slender ramicauls; spreading, sessile, cordate leaves; and a reclining spathe. A resupinate flower with a deeply concave, seven-veined, dorsal sepal is produced successively. The petals and lip arch forward from beneath the dorsal sepal. The middle lobe of the trilobed lip is purple-black while the basal lobes are red and broadly falcate. The aspect of the resupinate flower resembles a non-resupinate flower of *Pleurothallis* sect. *Macrophyllae-Racemosae*.

Although vegetatively inseparable from species of *Acronia* sect. *Macrophyllae-Fasciculatae*, even so far as the sepals and petals, this species is distinguished from all others by the sharply trilobed lip and the semiterete column with a subapical anther and entire, ventral stigma. These latter features, that suggest *Specklinia*, are sufficient to exclude it from *Acronia*, and section *Pleurothallis*. No pleurothallid taxon can accommodate this species, unless an exception be made for *Ancipitia* to include a non-compressed ramicaul. In the meantime, this oddity will be carried in *Acronia* sect. *Macrophyllae-Fasciculatae* with an exceptional lip and column.

Acronia platypetala (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *platypetalon*, "a broad petal," referring to the shape of the petal.

Bas.: *Pleurothallis platypetala* Luer & R.Escobar, Orquideología 20: 78, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, more than 12 cm long, with a close, tubular sheath on the lower quarter and 2 other sheaths at the base. **Leaf** spreading, coriaceous, narrowly ovate, acute, up to 8 cm long, 2 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the leaf, subtended by a narrow spathe 9-10 mm long; peduncles 3-5 mm long; floral bracts tubular, 5-7 mm long; pedicels 8-10 mm long; ovary 6-7 mm long; **sepals** yellow-green, glabrous, the dorsal sepal broadly elliptical-ovate, obtuse, 12 mm long, 10 mm wide, 7-veined, the lateral sepals connate into a broadly ovate, obtuse synsepal, 11 mm long, 11 mm wide, 6-veined, cellular-glandular centrally; **petals** yellow-green, cellular-glandular, obovate, oblique, subacute, acuminate, denticulate, 10 mm long, 4.5 mm wide, 3-veined; **lip** yellow-green, cellular-glandular, with microscopically denticulate margins, oblong-ovate, 5 mm long, 4 mm wide, the apex broadly obtuse with a small callus beneath, the disc flat to slightly convex, with an oblong glenion at the base, the base subtruncate and flattened on the end, hinged to the column-foot; **column** stout, terete, 1 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Putumayo**: epiphytic in forest east of San Francisco, alt. 2350 m, 27 Jan. 1987, *C. Luer, J. Luer, O. Ospina, R. Escobar & E. Valencia 12539* (Holotype: MO).

This species is apparently endemic on the eastern slope of the Andes of southern Colombia. It is distinguished by the medium habit with slender ramicauls that bear narrowly ovate, acute leaves cordate at the base. The yellow-green flowers are comparatively large with broad, multiveined sepals. Most distinctive are the broad, three-veined petals that are shortly acuminate. The petals are similar to those of *Acronia cardiostola*. The lip is "standard" for the section: oblong-ovate, obtuse, and with a glenion at the base.

Acronia platysepala (Schltr.) Luer, comb. nov.

Ety.: From the Greek *platysepalon*, "a broad sepal," referring to the dorsal sepal.

Bas.: *Pleurothallis platysepala* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 111, 1920.

Syn.: *Pleurothallis granularis* Luer & R.Escobar, Orquideología 16: 162, 1984.

Ety.: From the Latin *granularis*, "granular," referring to the texture of the lip.

Syn.: *Zosterophyllanthos granularis* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant medium to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-30 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly elliptical-obovate, subacute, slightly acuminate, 9-17 cm long, 2-3.8 cm wide, the base sessile, narrowly cuneate. **Inflorescence** a fascicle of successive, single flowers, borne from a narrow spathe 10-15 mm long; peduncles 2-5 mm long; floral bracts tubular, 5-10 mm long; pedicels 10-25 mm long; ovary 6-7 mm long; **sepals** red-brown with darker veins, cellular-papillose within, the dorsal sepal broadly elliptical-ovate to suborbicular, obtuse, 10-14 mm long, 11-13 mm wide, 7-veined, the lateral sepals connate into an ovate, obtuse synsepal, 12-17 mm long, 7-9 mm wide, 6-veined; **petals** purple-brown, cellular-papillose, denticulate, elliptical-obovate, subacute, 6-8.5 mm long, 2.5 mm wide, 3-veined; **lip** purple-brown, oblong-subquadrate, cellular-glandular, with microscopically denticulate margins, 5 mm long, 5 mm wide, the apex broadly rounded, the disc slightly convex, shallowly channeled, the base subtruncate with a small glenion between a pair of shallow, basal depressions, flattened on the deflexed end, hinged to the column-foot; **column** stout, terete, 2 mm long, 3 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: Valle del Cauca: dense, moist forest in the Andes west of Cauca, alt. 1600-2000 m, *F.C. Lehmann 6930* (Lectotype: K); west of Cali, *F.C. Lehmann 4500* (K); western cordillera of Cali, alt. 1600-2000 m, 16 Aug. 1880, *F.C. Lehmann 3013* (K), C. Luer illustr. 17101; El Tambo, Huisitó, alt. 1800 m, cultivated in Popayán by Amalia Lehmann de Sarria, 21 Oct. 1982, *C. Luer 8183* (SEL), holotype of *P. granularis*.

This species is apparently endemic on the western slope of the Andes of southern Colombia. It is distinguished by the large habit with slender ramicauls that bear narrowly obovate leaves that are narrowly cuneate below into a sessile base. The red-brown, cellular-papillose flowers are comparatively large with a broad, suborbicular dorsal sepal and a narrower synsepal. The petals are denticulate, and the lip is short and subquadrate.

Acronia portillae (Luer) Luer, comb. nov.

Ety.: Named in honor of Mario Portilla of Pangui, Ecuador, who collected this species.

Bas.: *Pleurothallis portillae* Luer, Selbyana 5: 176, 1979.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 11-21 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sheaths at the base. **Leaf** suberect in relation to the ramicaul, to pendent, coriaceous, narrowly linear, acute, with sides revolute, 8-15 cm long, 1-1.2 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower, subtended by a spathe 7-10 mm long; peduncles 2-3 mm long; floral bracts thin, tubular, 6-7 mm long; pedicels 7-8 mm long; ovary 3-4 mm long; **sepals** red-brown, microscopically pubescent, the dorsal sepal elliptical-oblong, obtuse, 6.5 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 4.5-5 mm long, 4-4.5 mm wide, 4-veined; **petals** red-brown, narrowly linear-oblong, subfalcate, acute, with microscopically irregular margins, 5 mm long, 0.5 mm wide, 1-veined; **lip** black, thickly ovoid, obtuse, 2 mm long, 1.75 mm wide, the disc slightly convex, without an obvious glenion, the base reflexed as a thick claw, broadly concave and mealy on the end, hinged to the base of the column-foot; **column** white, thick, 2 mm long, 1.75 mm wide, the foot thick, bulbous, minutely spiculate, the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: along Río Zamora east of the pass east of Loja, alt. 2500 m, 11 Feb. 1978, *C. Luer, J. Luer & M. Portilla 2529* (Holotype: SEL); east of the pass between Loja and Zamora, alt. 2500-3000 m, 25 Mar. 1990, *J.E. Madsen 87083* (AAU, QCA), C. Luer illustr. 17208. **Loja**: west of the pass between Loja and Zamora, alt. 2700 m, 14 Feb. 1985, *G. Harling & L. Andersson 22072* (GB).

This species is apparently endemic on the eastern slope of the Andes of southern Ecuador. It is characterized by the long, slender leaves, and a small, brown flower with obtuse sepals, narrow petals, and a thick, fleshy, ovoid lip.

Acronia prolaticollaris (Luer) Luer, comb. nov.

Ety.: From the Latin *prolaticollaris*, "with an elongated neck," referring to the long pedicels.

Bas.: *Pleurothallis prolaticollaris* Luer, Selbyana 3: 368, 1977.

Plant small to medium in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 8-20 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, ovate, acute, slightly acuminate, 3-8 cm long, 2-4.5 cm wide, the base sessile, deeply cordate with the lobes more or less overlapping. **Inflorescence** a fascicle of successive, erect, resupinate, single, yellow flowers, subtended by an erect spathe 13-15 mm long; peduncles 2 mm long, concealed within the sheath; floral bracts thin, tubular, 2-3 mm long; pedicels 10-20 mm long; ovary 3 mm long; **sepals** glabrous, membranous, the dorsal sepal ovate, subacute, 5-7 mm long, 3-5 mm wide, 3-veined, the lateral sepals connate into a similar, ovate, subacute lamina, 5-7 mm long, 4-5 mm wide, 4-veined; **petals** elliptical, acute, microscopically erose, 4-5 mm long, 1.3-2 mm wide, 1-veined; **lip** oblong, rounded at the apex, microscopically ciliate-erose, 2.25-2.5 mm long, 1.6-2 mm wide, the disc featureless, with a glenion at the base, the base subcordate, broadly concave on the end to accommodate the column-foot; **column** stout, 1 mm long, 1.5 mm wide, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: terrestrial on the road embankment on the new road between Quito and Santo Domingo, alt. ca. 1500 m, 28 Feb. 1975, *C. Luer & R. Kent 334* (Holotype: SEL); Río Pilatón between Santo Domingo and Quito, alt. 1100-1400 m, 14 June 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 7159* (AAU, AMES); between Chiriboga and Santo Domingo, alt. 1500 m, 28 May 1988, *C. Luer & A. Hirtz 13721* (K, MO). **Cotopaxi**: in old guava grove between Quevedo and Latacunga, alt. 600 m, 5 Mar. 1975, *C. Luer & R. Kent 308* (SEL); citrus grove between Quevedo and Latacunga, alt. 700-950 m, 5 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 2954, 3005, 3011* (AAU, AMES).

This species, apparently endemic on the western slopes of the Andes of central Ecuador, is distinguished by a cordate leaf with an erect spathe from which erect, long-pedicellate, widely expanded, yellow flowers are produced. The dorsal sepal and synsepal are subacute and similar; the petals are relatively large; and the small lip is oblong and rounded at the apex.

Acronia radula (Luer) Luer, comb. nov.

Ety.: From the Latin *radula*, "a rasp," referring to the verrucose lip.

Bas.: *Pleurothallis radula* Luer, Selbyana 5: 177, 1979.

Syn.: *Zosterophyllanthos radula* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium in size to large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 10-50 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, narrowly ovate, acute, 8-19 cm long, 2.8-6.2 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, erect, resupinate, single, yellow flowers, subtended by an erect spathe 14-27 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts thin, tubular, 5 mm long; pedicels 15 mm long; ovary 4 mm long; **sepals** glabrous, membranous, the dorsal sepal ovate, acute, 14 mm long, 6.4 mm wide, 3-veined, the lateral sepals connate into a similar, ovate, acute lamina, 14 mm long, 8.5 mm wide, 4-veined; **petals** reflexed, elliptical, acute, serrate, 8.5 mm long, 2 mm wide, 1-veined; **lip** thick, yellow, oblong-ovate, obtuse, coarsely verrucose, 5 mm long, 3 mm wide, the disc with a glenion at the base, the base subcordate, broadly concave on the end to accommodate the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, 2 mm long, with the anther, rostellum and stigma apical.

COSTA RICA: Cartago: terrestrial in forest near San Cristobal, alt. ca. 1900 m, 22 Sept. 1979, *C. Luer, J. Luer & K. S. Walter 4251* (Holotype: SEL; Isotype: K); without locality, collected by L. Glicenstein, cultivated by A. Jesup in Bristol, CT, 1 Dec, 1977, *C. Luer 2247* (SEL).

This species, apparently endemic in forests of central Costa Rica, is distinguished by a horizontal, narrowly cordate leaf with an erect, conspicuous spathe from which large, erect, widely expanded, yellow flowers are produced. The dorsal sepal and synsepal are acute and similar; the petals are serrate and reflexed; and the lip is coarsely verrucose.

Acronia rectipetala (Ames & C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin *rectipetalus*, "with straight petals." referring to the petals.
Bas.: *Pleurothallis rectipetala* Ames & C.Schweinf., Sched. Orch. 8: 32, 1925.

Syn.: *Pleurothallis scitula* Luer, Selbyana 3: 384, 1977.
Ety.: From the Latin *scitulus*, "pretty," in allusion to the plant in flower.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a long, tubular sheath below the middle and 2-3 shorter sheaths at the base, 8-25 cm long. **Leaf** deflexed, coriaceous, broadly cordate-ovate, concave, 6-13 cm long, 4.5-7.5 cm wide, the apex acute, the base deeply cordate with overlapping lobes, sessile. **Inflorescence** a fascicle of solitary, successive, resupinate flowers borne from a suberect, conduplicate spathe, 1.5-2.5 cm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 5-10 mm long; pedicels 10-15 mm long; ovary 5-6 mm long; **sepals** yellow, suffused with purple along the veins below the middle, diffusely short-pubescent, the dorsal sepal ovate, subacute, 11 mm long, 8 mm wide, 3-veined, the lateral sepals connate into an ovate synsepal, 11 mm long, 10 mm wide, 4-veined; **petals** pubescent, ciliate, narrowly elliptical-ovate, narrowly obtuse, 9 mm long, 2.25 mm wide, 1-veined; **lip** red, ovate, obtuse, 4 mm long, 3.5 mm wide, with basal angles rounded, the disc shallowly concave, minutely rugose above the middle, cellular-papillose below the middle on either side of a glenion, the base narrowly flattened on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

COSTA RICA: **Cartago**: Cachi, flowered in cultivation at Cartago, June 1924, *C.H. Lankester 915* (Holotype: AMES); vicinity of Ikutchenies (illegible), collected by M. Figueroa, cultivated 12 Nov. 1955 by *C.H. Lankester 1655* (AMES), C. Luer illustr. 17047; Taos, alt. 100 m, Dec. 1984, *R.L. Dressler 350* (USJ).
Puntarenas: Reserva Monteverde, Sendero Nuboso, alt. 100 m, July 1989, *J.T. Atwood 89-239* (USJ).
San José: Cerro de la Muerte, alt, 2550 m, 7 May 1993, *Inge Mack 7* (USJ).
PANAMA: **Chiriquí**: epiphytic in cloud forest on Cerro Hornito, alt. ca. 1700 m, 15 Dec. 1976, *C. Luer, A. Luer, R.L. Dressler, N.H. Williams & F L Stevenson 1361* (holotype of *P. scitula*: SEL).

With the large, deeply cordate leaf and a large, erect, foliaceous spathe, this species is vegetatively indistinguishable from *Acronia phyllocardia*. The flower of *A. rectipetala* is distinguished by the diffusely short-pubescent, yellow and purple sepals and petals; the synsepal broader than the dorsal sepal; and the ovate, cellular-papillose lip, without the smooth, concave areas that flank the glenion.

Acronia recurvata (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *recurvatus*, "recurved," referring to the sepals and petals.
Bas.: *Pleurothallis recurvata* Luer & Hirtz, Lindleyana 11: 182, 1996.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-11 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to erect, coriaceous, ovate, acute, 3.5-5.5 cm long, 1.5-2.5 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single, yellowish brown flowers, borne on top of the leaf, from a spathe 7-9 mm long; peduncles 1-2 mm long, confined within the spathe; floral bracts tubular, 5 mm long; pedicels 6-7 mm long; ovary 3 mm long; **sepals** glabrous, with the margins revolute above the middle, the dorsal sepal ovate, obtuse, 7.5 mm long, 3 mm wide expanded, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 7 mm long, 4 mm wide expanded, 4-(6-)veined; **petals** oblong, acute, entire, curved up, 6 mm long, 1 mm wide, 1-veined; **lip** thick, red-brown, obpyriform-ovate, 2.5 mm long, 1.9 mm wide, the apex obtuse with a low callus beneath, the disc lightly conduplicate, lightly channeled, with a large, flat glenion, the base broadly subcordate, flattened on the end, hinged to the column-foot; **column** stout, terete, 1 mm long, 1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: epiphytic in forest along Río Jamboe south of Zamora, alt. 1100 m, 3 Feb. 1987, *C. Luer, J. Luer & A. Hirtz 12608* (Holotype: MO); Cordillera del Condor, epiphytic in forest near Guayzimi, alt. 950 m, 19 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11943* (MO); Río Nangaritza, south of Paquisha, alt. 950 m, 11 Feb. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1893* (MO). **Morona-Santiago**: Cordillera del Condor, epiphytic in forest east of Guismé, alt. 950 m, 18 Feb 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11885* (MO); north of Macas, west of Río Palora, alt. 1200 m, 1 Mar. 2001, *C. Luer, J. Luer & A. Hirtz 19583* (MO); Bomboiza, cultivated by Ecuagenera, 5 Mar. 2001, *C. Luer 19703* (MO); Pangui, cultivated by Ecuagenera, 2 Feb. 2002, *A. Hirtz 8191* (MO).

Vegetatively, this species from lowland, southeastern Ecuador is indistinguishable from numerous relatives. Thin ramicauls bear a small, ovate-cordate leaf with a medium-sized flower above the base. The sepals are most easily distinguished by the revolute sides. The oblong petals curve up. The lip is thick and obpyriform with a large, flat glenion.

Acronia reginae (Garay) Luer, comb. nov.

Ety.: From the Latin *regina*, "the queen," referring to the large size.

Bas.: *Pleurothallis reginae* Garay, Svensk. Bot. Tidskr. 47: 210, 1953.

Plant large, presumably epiphytic, caespitose; roots coarse. Ramicauls stout, erect, to 50 cm long, with a close tubular sheath near the middle and another at the base. **Leaf** coriaceous, ovate, acute, slightly acuminate, 40 cm long, 21 cm wide, the base sessile, cordate. **Inflorescence** a single, successive flower borne from the base of the leaf with a spathe 2.5 cm long; peduncles not described; pedicels 5-6 cm long; floral bract 1.7 cm long; ovary 2.5 cm long; **sepals** dark brown, glandular-pubescent externally, the dorsal sepal broadly ovate, concave, subacute to obtuse, 30 mm long, 20 mm wide, multiveined, the lateral sepals connate into an ovate, acute synsepal, 25 mm long, 17 mm wide, multiveined; **petals** obliquely unguiculate at the base, oblong-ovate, obtuse, mucronate at the apex, with densely papillose nerves, 15 mm long, 8-10 mm wide, 3-veined; **lip** suborbicular, shortly unguiculate at the base, "apex acuminate" (round in the illustration), 8 mm long, 10 mm wide, the disc transversely verrucose; **column** stout, semiterete, without dimensions.

COLOMBIA: **Cauca**: El Tambo, La Costa, primary forest, alt. 800 m, without date, *K. von Sneidern 811* (Holotype: S).

This species of southern Colombia is apparently one of several allied to monstrous *Acronia gargantua* of adjacent Ecuador. It is known only from the single collection of von Sneidern. No material is available for illustration. It is distinguished from the related species by sepals that are puberulent externally, the sepals of all the others being glabrous externally. Also distinctive is the tip of the petal being described as mucronate. Also differing from all the others, the lip is suborbicular, apparently not convex, and densely transversely verrucose-rugose.

Acronia reptans (Luer) Luer, comb. nov.

Ety.: From the Latin *reptans*, "creeping," referring to the habit of the plant.

Bas.: *Pleurothallis reptans* Luer, Phytologia 49: 215, 1981.

Syn.: *Zosterophyllanthos reptans* (Luer) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant small, epiphytic, long-repent, the rhizome 0.5-2 cm long between ramicauls; roots slender. Ramicauls slender, ascending to erect, 1.5-3 cm long, with a close, tubular sheath below the middle and another at the base. **Leaf** erect to suberect, coriaceous, elliptical, acute, 2-3 cm long, 0.8-1.1 cm wide, the base cuneate, sessile. **Inflorescence** a successive, single, orange flower, subtended by a spathe 4 mm long at the base of the leaf; peduncles 0.5-2 mm long, concealed within the sheath; floral bracts thin, tubular, 2 mm long; pedicels 2.5 mm long; ovary 1 mm long; **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, 3.5 mm long, 2 mm wide, 3-veined, the lateral sepals connate into a similar, ovate, subacute lamina, 3.25 mm long, 2 mm wide, 4-veined; **petals** narrowly ovate, expanded, acute, serrate, 2.75 mm long, 0.5 mm wide, 1-veined; **lip** triangular-ovate, subacute, apiculate, minutely verrucose with the margins minutely erose, 2 mm long, 1.3 mm wide, the disc flat with a glenion at the base, the base subcordate, with subacute basal angles, shallowly concave on the end, hinged to the column-foot; **column** stout, 0.5 mm long, 1 mm wide, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **Sucumbíos**: forest southeast of El Carmelo, alt. 2050 m, 17 May 1981, *C. Luer, J. Luer & A. Hirtz 6298* (Holotype: SEL).

This species is known from only the original collection. The long-repent habit is unique in the section. The ramicauls are produced about every two centimeters along a slender rhizome. The leaf is elliptical, the dorsal sepal and synsepal are obtuse, the petals are narrow and serrate, and the lip is ovate-triangular and minutely verrucose with the apex apiculate.

Acronia rhodoglossa (Schltr.) Luer, comb. nov.

Ety.: From the Greek *rhodoglossa*, "with a red tongue," referring to the red lip.

Bas.: *Pleurothallis rhodoglossa* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 22, 1922.

Syn.: *Zosterophyllanthos rhodoglossus* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-35 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, broadly ovate, subacute to obtuse, acuminate at the tip, 5-13 cm long, 2.5-5.5 cm wide, the base sessile, cordate. **Inflorescence** a single flower produced successively, borne on top of the leaf, subtended by a narrow spathe 5-10 mm long; peduncles 1-2 mm long within the spathe; floral bract tubular, 3-5 mm long; pedicel 3-7 mm long; ovary 2-3 mm long; **sepals** yellow to yellow-green, sometimes with brown suffusion along veins, glabrous, the dorsal sepal elliptical-obovate, obtuse, 3.5-5 mm long, 2.5-4 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 2.5-4 mm long, 2.5-4 mm wide, 4-veined; **petals** brown or purplish, oblong, acute, microscopically erose, 2-4 mm long, 0.5-0.8 mm wide, 1-veined; **lip** red, brown or purple, cordate-ovate, obtuse, 1.5-2 mm long, 1.5 mm wide, the disc convex above the base with a bilobed glenion, or nearly flat above the base with a bilobed glenion, the base shallow with obtuse basal lobes, hinged to the base of the column-foot; **column** semiterete, 0.5 mm long, 0.8-1 mm wide, the foot obsolescent, with the anther, rostellum and stigma apical.

PANAMA: **Panama**: hills east of Panama City, alt. near sea level, *C.W. Powell 182* (Holotype destroyed at B; Lectotype: MO). **Chiriquí**; "Province of Chiriquí, alt. 1200 m, *C.W. Powell 182* (Paratype destroyed at B; Lectoparatype; AMES); C. Luer illustr. 19087; San Vicente, between Volcán and Concepción, alt. 500 m, 11 Sept. 1976, *C. Luer & H. Butcher 1197* (SEL). **Coclé**: El Valle, alt. 1000 m, collected Sept. 1976, cultivated 28 Jan. 1982, *C. Luer 6812* (SEL).
COSTA RICA: **Limón**: El Progresso, alt. 550 m, 17 Apr. 1989, *G. Herrera 2649* (CR, MO), C. Luer illustr. 17048. **San José**: Zurquí, alt. 1800 m, 28 Oct. 1969, *L.D. Gomez 2409* (F, SEL).
COLOMBIA: **Cauca**: near Popayán, cultivated by Amalia Lehmann de Sarria, 16 Nov. 1982, *C. Luer 8452* (SEL).
ECUADOR: **Carchi**: between Maldonado and Chical, alt. 1500 m, 15 Jan. 1992, *C. Luer, J. Luer, A. Jesup, P. Jesup & A. Hirtz 16029* (MO). **Esmeraldas**: west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer et al. 12396* (MO). **Imbabura**: near Lita, cultivated at Ecuagenera, Gualaceo, 7 Mar. 2001, *C. Luer 19828* (MO). **Pichincha**: between Angamarca and Corazón, alt. 1500 m, 17 Feb. 1979, *C. Luer, J. Luer & A. Hirtz 4001* (SEL); below Tandayapa, alt. 1200 m, Sept. 1984, *A. Hirtz 1893* (MO). **Pastaza**: north of Puyo, *C. Luer 945* (SEL). **Los Ríos**: Montañas de Ila, between Patricia Pilar and 24 de Mayo, alt. 540 m, 30 May 1976, *C.H. Dodson 6126* (SEL). **Morona-Santiago**: Tena *C. Luer 549, 638* (SEL); Río Calagras, alt. 1600 m, 19 Sept. 1980, *C. Luer 5497* (SEL). **Azuay**: orange grove, old road to Cuenca, 20 Feb. 1977, *C. Luer & J. Luer 1481* (SEL). **El Oro**: between Piñas and El Placer, alt. 800-1200 m, 6 May 1974, *G. Harling & L. Andersson 14379* (GB); below Piñas, alt. ca. 1000 m, collected Mar. 1977, cultivated at SEL, 5 Feb. 1982, *C. Luer 6824* (SEL); south of Piñas, alt. 1000 m, 20 Mar. 1985, *C. Luer, J. Luer & A. Hirtz 10660, 10663* (MO). **Zamora-Chinchipe**: Cordillera del Condor: east of Los Encuentros, alt. 1500 m, 19 May 1988, *C. Luer, A. Hirtz et al. 13482* (MO, QCNE).

Schlechter cited *Powell 182*, from hills east of Panama City, when he published *Acronia rhodoglossa*. A specimen without flower is at MO. Another colletion labelled *Powell 182*, from the province of Chiriquí, is at AMES. Powell obviously thought that these two collections represented the same species. Similar to many allied species of this section, this species is widely distributed from Costa Rica into Ecuador.

Acronia rhodoglossa is characterized by a slender ramicaul with a relatively large, deeply cordate leaf acuminate at the tip. The sepals vary from white to pale yellow and between three to six millimeters long. The oblong petals are minutely denticulate. The red or yellow lip lip is ovate, obtuse and shallowly cordate at the base. At the base of the disc the glenion is bilobed. In Costa Rican and Panamanian collections, the glenion is raised on a broad, low callus, which is only occasionally seen in Andean collections. Identical specimens with the bilobed callus borne on a nearly flat surface are more commonly seen. Schlechter's illustration of the Panamanian collection fails to show a bilobed glenion.

Acronia ripleyi (Luer) Luer, comb. nov.

Ety.: Named in honor of the late Harold Ripley of San Francisco, CA, who collected this species.

Bas.: *Pleurothallis ripleyi* Luer, Selbyana 5: 178, 1979.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect to arching, 20-38 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** arcuate to descending, coriaceous, narrowly elliptical-linear, acute, often with revolute margins, 12-16 cm long, 1.5-1.8 cm wide expanded, 1 cm wide unexpanded, the base sessile, shallowly cordate. **Inflorescence** a fascicle of successive, non-resupinate flowers, borne at the base of the leaf, from a reclining spathe 15-23 mm long; peduncles ca. 5 mm long, confined within the spathe; floral bracts tubular, ca. 5 mm long; pedicels ca. 7 mm long; ovary 7-8 mm long; **sepals** yellow-green, lightly speckled with red mostly along the veins, glabrous, the middle sepal ovate, obtuse, concave, 8 mm long, 5 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse, deeply concave synsepal, 8 mm long, 7 mm wide, 6-veined; **petals** light red-brown, reflexed, oblong, acute, minutely serrate, 7.5 mm long, 2 mm wide, 1-veined; **lip** thick, suffused with rose below the middle, orange above the middle, ovate, 4 mm long, 4 mm wide, the apex obtuse, the disc convex, with a tall, erect, basal callus bearing the glenion, the base concave, hinged to a bulbous, red-papillose tip of the column-foot; **column** stout, terete, 2 mm long, 2.5 mm wide, the foot thick, 2 mm long, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe?**: without certain locality, collected in May 1976 by H. Ripley, cultivated in San Francisco, CA, 15 Dec. 1978, *C. Luer 3642* (Holotype: SEL).

This species was described as *PLeurothallis ripleyi* [=*Acronia ripleyi*], and simultaneously with *Pleurothallis variabilis* [=*Acronia variabilis*], with which it has proved to be closely allied. The former, if the locality be correct, is uncommon in southeastern Ecuador, while the latter is frequent in northern Ecuador and southern Colombia. *Acronia ripleyi* is distinguished by the slender ramicaul that bends above and bears a long, slender, pendent leaf. The somewhat smaller, non-resupinate flower is similar to that of *A. variabilis*, both with a deeply concave, uppermost synsepal. The petals of both reflex similarly, but the petals of *A. ripleyi* are oblong and shorter with minutely serrated margins. The lips are similar, but the base of the lip of *A. ripleyi* is concave to accommodate a red-papillose, bulbous tip of the column-foot.

Acronia robusta Luer & Hirtz, sp. nov.

Ety.: From the Latin *robustus*, "robust," referring to the strong habit.

Species haec *Acroniae cedrinorum* (Luer & Dalström) Luer affinis, sed habitu robustiore, petalis latioribus trinernis differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 25-35 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, ovate, acute, 11-15 cm long, 5-6 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 10-15 mm long; peduncles 2-3 mm long, concealed within the spathe; floral bracts thin, tubular, 5 mm long; pedicels 10-15 mm long; ovary 7-9 mm long, 3 mm thick; **sepals** yellow with orange veins, microscopically ciliate, the dorsal sepal ovate, subacute, 20 mm long, 14-15 mm wide, 7-veined, the lateral sepals connate into an ovate, obtuse, 18 mm long, 14 mm wide, 8-veined; **petals** orange, obliquely oblong-subfalcate, subacute, entire, 15 mm long, 3.5 mm wide, 3-veined; **lip** prone, orange, elliptical-obovate, obtuse, 11 mm long, 6.5 mm wide, the disc featureless except for a small glenion at the base between small elevations, the base subtruncate, shortly deflexed on the end, hinged to the column-foot; **column** green, stout, 2 mm long, 3.5 mm wide, the foot thick, with the anther, rostellum and stigma apical.

EDUADOR: **Sucumbíos**: La Bonita, alt. 2800 m, *A. Hirtz 4982* (Holotype: MO), C. Luer illustr. 16239; southeast of El Carmelo, alt. 2500 m, 17 May 1981, *C. Luer, J. Luer & A. Hirtz 6295* (SEL);

This species from northernmost Ecuador is similar to *Acronia cedrinorum*, but differs in the strong, robust habit, and broader, three-veined petals. It is even more similar to the Central American *Acronia cardiochila*. The broad sepals are similar and multiveined, and the petals are oblong and three-veined.

Acronia ruberrima (Lindl.) Luer, comb. nov.

Ety.: From the Latin superlative *ruberrimus*, "very red," referring to the flowers.
Bas.: *Pleurothallis ruberrima* Lindl., Orch. Linden. 1, 1846.

Syn.: *Pleurothallis yungasensis* Rolfe, Mem. Torrey Bot. Club 4: 259, 1895.
Ety.: Named for the Yungas of Bolivia where the species was collected.

Syn.: *Pleurothallis opeatorhyncha* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 62, 1921.
Ety.: From the Greek *opeatorhynchos*, "a mysterious kind of beak or snout."

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-60 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 8-25 cm long, 2-4 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower or a few simultaneous flowers, borne from a reclining spathe 12-25 mm long at the base of the leaf; peduncles 4-7 mm long, confined within the spathe; floral bracts tubular, 5-10 mm long; pedicels flexible, 2-6 cm long; ovary 4-8 mm long; **sepals** glabrous, greenish, usually heavily striped with red-purple, occasionally yellow, the middle sepal narrowly ovate, acute, often acuminate, 15-45 mm long, often with or without recurved sides, 6-10 mm wide expanded, 7-11-veined, the lateral sepals connate into an ovate, acute to narrowly obtuse synsepal, 15-32 mm long, 9-16 mm wide, 8-12-veined; **petals** red or yellow, thick, subcarinate, triangular, often with an obtuse lobe at the base of the upper margin, acute, entire, 5-12 mm long, 1-3 mm wide, 1- to 3-veined; **lip** thick, broadly ovate, the apex broadly obtuse to rounded, sometimes with sides recurved, with minutely erose margins, 3-4 mm long, 3.5-4.5 mm wide expanded, the disc convex, usually with a rounded callus, sometimes subpyramidal, with a small glenion, the base broadly subcordate, hinged to a short column-foot; **column** stout, terete, 1.5 mm long, 3 mm wide, the foot thick, 1.5 mm long, with the anther, rostellum and bilobed stigma apical.

Representative collections:
VENEZUELA: **Merida**: without specific locality, alt. 6,000 ft., Aug. 1842, *J. Linden 670* (Holotype: K); without locality, *A. Fendler 2585* (K).
COLOMBIA: **Santander**: Virolin, El Taladro, collected by E. Valencia, cultivated at Colomborquídeas, Feb. 1993, *R. Escobar 5017* (MO). **Cundinamarca**: Monte Redondo, alt. 1700 m, 15 Dec. 1950, *M. Schneider 404* (S). "Palanda," 21 Dec. 1876, *E. André 4634* (K). **Huila**: Belén, alt. 2000-2200 m, collected by J. Aguirre, cultivated at Colomborquídeas, 26 Feb. 1993, *R. Escobar 5024* (MO). **Nariño**: above Ricaurte, alt. 1800 m, 25 Jan. 1987, *C. Luer, J. Luer & A. Hirtz 12510* (MO).
ECUADOR: **Carchi**: east of Maldonado, alt. 1700 m, 17 Mar. 1991, *C. Luer, J. Luer, A. Hirtz et al. 15127* (MO. **Pichincha**: between Nanegal and Nanegalito, alt. 1200-1500 m, 24 Jan. 1974, *G. Harling & L. Andersson 11585* (GB). **Pastaza**: Mera, along Río Pindo, alt. 1000 m, 15 Mar. 1980, *G. Harling & L. Andersson 17336* (GB). **Napo**: between Cotundo and Coca, alt. 1130 m, 19 June 1983, *C.H. Dodson et al. 14109* (SEL). **Tungurahua**: confluence of Río Mapoto and Río Pastaza, alt. 1225 m, 21 Mar. 1939, *C.W. Penland & R.H. Summers 211* (AMES). **Chimborazo**: subandine forest of Mt. Chimborazo, alt. 1500 m, *A. Sodiro s.n.* (holotype of *A. opeatorhyncha* destroyed at B). **Morona-Santiago**: Cordillera del Condor, east of Chuchumbletza, alt. 1650 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13532* (MO); west of Macas, alt. 1700 m, 12 May 2000, *S. Dalström, R. Burian & L. Jost 2442* (MO); between Mendez and Guarumales, 13 May 2000, *S. Dalström, L. Jost & R. Burian 2456* (MO). **El Oro**: old road west of Pacha, alt. 1100 m, 23 May 1988, *C. Luer, A. Hirtz et al. 13619* (MO).
PERU: **Cuzco**: Convención, Sapa Sachagoic, alt. 2300 m, 5 Mar. 1942, *C. Vargas 2547* (AMES, Herb. Vargas). **Huánuco**: Cerros del Sira, alt. 1780 m, 28 July 1869, *T.R. Dudley 13394* (NA). **Amazonas**: near Pomacochas, alt. 7,000 ft., collected and cultivated in Tacoma, WA, Oct. 1996, *K. Tokach P-3* (MO). **Junín**: Satipo, Cordillera Vilcabamba, alt. 2050 m, 23 June 1997, *B. Boyle 4579* (SEL, USM).
BOLIVIA: **La Paz**: Yungas, 1890, *M. Bang 459* (holotype of *A. yungasensis*: K; isotypes: AMES, NY, US); Hda. Simaco, above the way to Tipuani, alt. 1400 m, Feb. 1920, *O. Buchtien 5035* (AMES, HBG); Murillo, below dam at Lago Zongo, alt. 2200 m, 16 Dec. 1982, *J.C. Solomon 9139* (MO; SEL).

This species is frequent and extremely variable in its wide distribution through the Andes from western Venezuela into Bolivia. Long ramicauls bear erect, long, narrow leaves. Single, large flowers are produced successively, or a few simultaneously, by long, flexible, drooping peduncles, dangling the flowers over the sides of the leaf. The dorsal sepal is multiveined, but the number of veins is inconstant, and the sides of the sepal are usually recurved. The petals are acute and much shorter, either one- or three-veined, with a lobule at the base. The obtuse lip is proportionately small and the disc varies from being merely slightly convex to thickly callous, sometimes even with an erect conical callus. Attempts have been made to recognize some variations, but the variations are inconstant and grade into each other.

Acronia rubroinversa (Luer) Luer, comb. nov.

Ety.: From the Latin *rubroinversus*, "red-inverted," referring to the flowers.

Bas.: *Pleurothallis rubroinversa* Luer, Selbyana 1: 276, 1975.

Plant small to medium in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 7-10 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** suberect to horizontal, thickly coriaceous, ovate, acute, 4-6 cm long, 1.5-2 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, non-resupinate, single flowers, subtended by a spathe 10-16 mm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts thin, tubular, 5 mm long; pedicels 8 mm long; ovary 5 mm long; **sepals** dark purple, minutely pubescent externally, the middle sepal ovate, obtuse, concave, 8 mm long, 6 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 8 mm long, 6 mm wide, 4-veined; **petals** dark purple, broadly elliptical, acute, lacerate, 6 mm long, 2.25 mm wide, 1-veined; **lip** uppermost, red-purple, transversely ovate, subcordate, rounded at the apex, denticulate, 3 mm long, 3.5 mm wide, the disc minutely verrucose, with a pair of smooth, yellow areas to either side of the glenion at the base, the base broadly concave on the end to accommodate the column-foot; **column** stout, 1 mm long, 1.5 mm wide, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: terrestrial on the road embankment on the new road between Quito and Santo Domingo, alt. 1800 m, 10 Mar. 1975, *C. Luer & R. Kent 226* (Holotype: SEL).

This species, apparently endemic on the western slopes of Pichincha in central Ecuador, is similar to *Acronia lacera* from a higher altitude. From the latter it is distinguished by a wider leaf cordate at the base; widely expanded flowers; and a lip merely minutely denticulate instead of coarsely lacerate.

Acronia rugosa (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *rugosus*, "wrinkled," referring to the labellum.

Bas.: *Pleurothallis rugosa* Luer & R.Escobar, Orquideología 15: 147, 1982.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-13 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, ovate, acute, acuminate, 6-8 cm long, 3-3.8 cm wide, the base sessile, deeply cordate. **Inflorescence** a single, successive, resupinate flower, borne erect from a semierect spathe 15 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts thin, tubular, 10 mm long; pedicels erect, 20-22 mm long; ovary 6 mm long; **sepals** cellular-glandular, the dorsal sepal orange-brown with purple veins, erect, concave, elliptical-ovate, obtuse, 13-14 mm long, 8.5 mm wide, 3-veined, the lateral sepals purple, connate into an ovate, acute lamina, 14 mm long, 7 mm wide, 4-veined; **petals** purple-brown, incurved, narrowly elliptical, acute, serrate, 10.5 mm long, 1.75 mm wide, 1-veined; **lip** deep purple-brown, perpendicular to the column, ovate, obtuse, coarsely transversely rugose, 7 mm long, 4 mm wide, the disc with a glenion at the base, the base truncate, shallowly concave on the end beneath the column, hinged to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot 2 mm long, pubescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Cauca**: San Sebastián, Central Cordillera, road from La Vega to Páramo de Barbillas, alt. 3070 m, 27 July 1978, *C. Luer, J. Luer, R. Escobar at al. 3053* (Holotype: SEL).

This species is known only from the original collection. It is distinguished by the erect flower held above a deeply cordate leaf. The dorsal sepal is broad and obtuse, the synsepal is acute, the narrow petals are incurved and serrate, and the ovate lip is deep purple and transversely erose.

Acronia rutrifolia Luer & Hirtz, sp. nov.

Ety.: From the Latin *rutrifolius*, "with spade-like leaf," referring to the shape of the leaf.

Species haec *Acroniae bivalvis* (Lindl.) Luer affinis, sed foliis longiacuminatis, labello oblongo-ovato ad apicem obtuso subter calloso, marginibus erectis denticulatis, et glenio elevato differt.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 23-30 cm long, with a close, tubular sheath on the lower fourth and 2 other sheaths at the base. **Leaf** horizontal, spreading, coriaceous, ovate, acute, long-acuminate, 7-9 cm long, 4-5 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a fugacious spathe; peduncles fasciculate, 2-3 mm long, floral bracts thin, tubular, 5 mm long; pedicels 5 mm long; ovary 3 mm long; **sepals** yellow, microscopically ciliate, the dorsal sepal obovate, subacute, 6 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute lamina, 5 mm long, 3.5 mm wide,

4-veined; **petals** yellow, oblong, slightly oblique, acute, denticulate, 3 mm long, 0.5 mm wide, 1-veined; **lip** yellow, prone, oblong-ovate, 1.75 mm long, 1.25 mm wide, the apex obtuse with a callus beneath, the disc shallowly concave with erect, denticulate margins, the base broadly truncate with a conspicuous, elevated glenion the base subtruncate, shortly deflexed on the end, hinged to the column-foot; **column** stout, 1.5 mm long and wide, the foot thick, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: between Chiriboga and Santo Domingo, alt. 1500 m, 28 May 1988, *C. Luer, J. Luer & A. Hirtz 13725* (Holotype: MO).

This species is another close relative of the *Acronia bivalvis*-complex from which it can be recognized by the ovate, acuminate leaves and small flowers. Although the floral pattern is similar with an ovate dorsal sepal, a similar ovate synsepal, and oblong, denticulate petals, the lip differs with a broadly truncate base with a distinct, elevated glenion, a broadly concave disc with erect, denticulate margins, and a thick callus beneath the apex.

Acronia saccatilabia (C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin, saccatilabius, "with saccate lip," referring to the concave labellum.
Bas.: *Pleurothallis saccatilabia* C.Schweinf., Bot. Mus. Leafl. 8: 43, 1940.
Syn.: *Zosterophyllanthos saccatilabius* (C.Schweinf.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-5.5 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** erect, thickly coriaceous, elliptical-oblong, subacute, 3.5-5.5 cm long, 1-1.5 cm wide, the base cuneate, sessile. **Inflorescence** a successive, single, resupinate flower, subtended by a spathe 6-7 mm long; peduncles ca. 5 mm long, concealed within the sheath; floral bracts thin, tubular, 4 mm long; pedicels 5 mm long; ovary 4 mm long; flowers light green; **sepals** fleshy, glabrous, the dorsal sepal elliptical, broadly obtuse or rounded at the apex, 7 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse, concave synsepal, 6 mm long, 6 mm wide, 4-veined; **petals** suffused with light brown, obovate-spathulate, incurved, shallowly concave, obtuse, 3.5 mm long, 1.5 mm wide, 1-veined; **lip** thick, subovate-oblong, obtuse, 2.5 mm long, 1.5 mm wide, with basal angles erect, obtuse, the disc with a pair of small basal calli at the base, and central, longitudinal cavity, the base truncate, hinged on the end to the base of the column; **column** stout, 1 mm long, 1 mm wide, the foot obsolescent, the anther, rostellum and transverse stigma apical.

MEXICO: **Chiapas**: Mt. Ovando, alt. 1250-2370 m, July 1938, *E. Matuda 2546* (Holotype: UM; Isotype: AMES); Mt. Boquerón, above Huixtla, alt. 1400 m, 12 Oct. 1936, *O. Nagel 4353* (AMES). GUATEMALA: **Quezaltenngo**: Volcán Santa María, between Santa María and Calahuaché, alt. 1300-2000 m, 1-2 Jan. 1940, *J.A. Steyermark 33454* (AMES, F). **Alta Verapaz**: near Cobán, cultivated by O. Mittlestaedt, Vivero Verapaz, Cobán, 13 Feb. 1990, *C. Luer 14587* (MO).

This species occurs infrequently in Chiapas and neighboring Guatemala. It is characterized by a thick, narrow leaf that is cuneate at the base where a spathe and the successive flower are produced. The dorsal sepal and synsepal are broadly obtuse; the petals are spathulate; and the lip is oblong and obtuse with a central cleft and erect, basal angles.

Acronia sanchoi (Ames) Luer, comb. nov.

Ety.: Named in honor of Alfredo Sancho, co-collector of the species.
Bas.: *Pleurothallis sanchoi* Ames, Sched. Orchid. 4: 26, 1923.
Syn.: *Pleurothallis gonioglossa* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 189, 1923.
Ety.: From the Greek *gonioglossa*, "with angled lip," referring to the thick lip bent near the middle.
Syn.: *Zosterophyllanthos gonioglossa* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.
Syn.: *Zosterophyllanthos sanchoi* (Schltr.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect or horizontal, 3-7 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect or horizontal, rigid, thickly coriaceous, elliptical-ovate to elliptical, subacute, 2.5-4 cm long, 0.8-1.6 cm wide, the base cuneate to very shallowly subcordate, sessile. **Inflorescence** a successive, single, resupinate flower, subtended by a spathe 4-6 mm long; peduncles ca. 2 mm long, concealed within the sheath; floral bracts thin, tubular, 3-5 mm long; pedicels 5-10 mm long; ovary 3-4 mm long; **sepals** dull white, more or less lightly suffused with purple above the middle, fleshy, glabrous, the dorsal sepal ovate, obtuse, slightly concave, 5-6 mm long, 3.5-4 mm wide, 3-veined, the lateral sepals connate into an

ovate, obtuse synsepal, 4.5-6 mm long, 4-4.5 mm wide, 4-veined; **petals** purple, linear-subfalcate, minutely denticulate to fringed, acute, 4-5.5 mm long, 1-1.5 mm wide, 1-veined; **lip** purple, thick, cordate-ovate, obtuse, shortly acuminate, 2-3 mm long, 2-2.5 mm wide, with the margins minutely subcrenulate, with the basal angles, erect, obtuse, to either side of the column, the disc concave between thickened halves, with a small but distinct glenion, the base deflexed, geniculate, hinged on the end to the base of the column; **column** stout, 1 mm long, 1.5 mm wide, the foot obsolescent, the anther, rostellum and transverse stigma apical.

COSTA RICA: **Cartago**: La Estrella, 9 Jan. 1923, *C.H. Lankester & A. Sancho 394* (Holotype AMES). Without collection data, alt. 4,000 ft., 1867, *A. Endres 48, 67* (W). **Alajuela**: humid forest, San Pedro de San Ramón, alt. 1100 m, Sept. 1921, *A.M. Brenes 178* (holotype of *P. gonioglossa* destroyed at B, lectotype: CR; isolectotypes: AMES, NY); Reserva Forestal de San Ramón, cultivated at the Lankester Botanical Garden, Cartago, 7 Mar. 1995, *C. Luer 17373* (MO). **Heredia**: Parqué Nacional Braulio Carrillo, alt. 500 m, Nov. 1990, *S. Ingram & K. Ingram-Ferrell 789* (CR, SEL), C. Luer illustr. 17039; Parqué Nacionál Braulio Carrillo, alt. 820 m, Nov. 1990, *S. Ingram & K. Ingram-Ferrell 687* (CR, SEL), C. Luer illustr. 17061.
GUATEMALA: **Alta Verapaz**: epiphytic near Cobán, cultivated by O. Mittelstaedt at Cobán, 13 Feb. 1990, *C. Luer 14604* (MO); "Quixal," near Pampache, alt. 1460 m, 26 Feb. 1981, *C. Luer, J. Luer, M. & M. Dix 5905* (SEL).
PANAMA: **Chiriquí**: Cerro Colorado, collected Sept. 1976, cultivated 16 Feb. 1977, *C. Luer & H. Butcher 1597* (SEL). **Coclé**: above El Copé, alt. 900 m, 17 Feb. 1985, *C. Luer, J. Luer, R. Dressler & K. Dressler 10636* (MO).

This species occurs locally, but it is widely distributed in Central America from Guatemala to central Panama. It was first collected by Endres in the nineteenth century. The slender ramicauls bear thick, rigid, elliptical-ovate, sessile leaves more or less horizontally with the resupinate flower borne on top. The sepals are pale colored while the narrowly linear-subfalcate, variously serrate, purple petals spread. The lip is thickly cordate-ovate, obtuse, shortly acuminate, with erect, obtuse basal lobes to either side of the base of the lip. The disc is concave between thickened halves with a small glenion.

Acronia sannio (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *sannio*, "a jester," in allusion to the strange flower.
Bas.: *Pleurothallis sannio* Luer & R.Escobar, Orquideología 21: 106, 1998.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 15-26 cm long, with a close, tubular sheath near the middle and 2 other sheaths at the base. **Leaf** horizontal, coriaceous, narrowly ovate, acute, 9-10 cm long, 2.5-3 cm wide, the base sessile, with cordate lobes 0.5 cm deep. **Inflorescence** a fascicle of successive, single flowers, from a suberect spathe 1.5 cm long, 5-7 mm wide; peduncles 2-3 mm long, concealed within the spathe; floral bracts thin, tubular, ca. 10 mm long; pedicels 15-18 mm long; ovary 6 mm long; flowers light orange-brown; **sepals** glabrous, the dorsal sepal ovate, obtuse, convex with recurved sides, 8 mm long, 5.5 mm wide expanded, 3-veined, the lateral sepals connate into a transversely obovate synsepal, 4 mm long, 8 mm wide, 4-veined, concave centrally, with the sides deflexed; **petals** obliquely triangular-ovate, acute, serrate, pubescent, 6 mm long, 2 mm wide, 1-veined; **lip** thick, ovate, rounded at the apex, cellular-glandular near the middle, 3 mm long, 2.5 mm wide, the disc with a thick, protruding callus below the middle with a large glenion, the base broadly truncate, with a thick reflexed claw, hinged to the column-foot; **column** 1 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

COLOMBIA: **Chocó**: epiphytic in cloud forest at the pass between Urrao and Carmen de Atrato, alt. ca. 2700 m, collected 12 Dec. 1994 by R. Escobar and W. Teague, cultivated at Colomborquídeas, 30 May 1995, *C. Luer 17624* (Holotype: MO). **Santander**: between Bucaramanga and Berlin, alt. 2600 m, 27 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7621* (SEL); east of Bucaramanga toward Berlin, alt. 2550 m, 7 May 1984, *C. Luer, J. Luer, R. Escobar, E. & E. Valencia 10195* (MO). **Risaralda**: cultivated by S. Tsubota in Pereira, 10 May 1993, probably collected nearby, *C. Luer 16758* (MO).

This species is most closely related to Peruvian *Acronia scurrula* whose solitary, non-resupinate flower emerges from a conspicuous, suberect spathe. From the latter it is distinguished by a broad dorsal sepal; a synsepal with deflexed sides; minutely pubescent, serrate petals; and a large, elevated glenion on the basal half of the lip.

Acronia sarcochila (Garay) Luer, comb. nov.

Ety.: From the Greek *sarcocheilos*, "a fleshy lip," referring to the labellum.

Bas.: *Pleurothallis sarcochila* Garay, Arquiv. Jard. Bot. Rio de Janeiro 12: 176, 1953.

Plant large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls relatively slender, erect, 25-40 cm long, with a close, tubular sheath on the lower third and another 1-2 sheaths at the base. **Leaf** suberect or spreading, coriaceous, oblong-ovate, subacute, acuminate, 10-21 cm long, 3-6 cm wide, the base sessile, cordate. **Inflorescence** a large, solitary, successive flower, subtended by a spathe 15 mm long at the base of the leaf; peduncles 5-10 mm long, concealed within the sheath; floral bracts thin, tubular, 10-12 mm long; pedicels 15-25 mm long; ovary 10 mm long; **sepals** shades of yellow to green or brown, glabrous, the dorsal sepal broadly ovate, subacute, 25-42 mm long, 12-20 mm wide, 7-veined, the lateral sepals connate into an ovate, acute lamina, 25-39 mm long, 10-12 mm wide, 6-veined to indistinctly 8-veined; **petals** orange to red-purple, oblong, obtuse, minutely denticulate, glabrous to minutely pubescent, 12-22 mm long, 3-3.5 mm wide, 1-veined (occasionally 2-veined in large specimens), with an inconspicuous lobule on the upper margin at the base; **lip** red-purple to purple-brown, erect, subovate, obtuse, smooth, 9-15 mm long, 7-9 mm wide, the margins minutely denticulate, the disc more or less convex, with a low, subconical callus at the base, the base subcordate, thickened and shallowly concave on the end; **column** stout, 3 mm long, 3 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

ECUADOR: **Carchi**: El Vinculo, epiphytic in primary forest, 22 Aug. 1920, *I. Holmgren 899* (Holotype: S; isotypes: AMES, US); Bolívar, above La Paz, alt. 3100 m, 18 Feb. 1998, *C. Luer, J. Luer, A. Hirtz & J. del Hierro 18717, 18739* (MO); between Tulcán and El Carmelo, alt. 3200 m, 5 Apr. 1984, *C. Luer, S. Dalström & T. Höijer 9959* (MO); terrestrial in scrubby forest north of El Playón, alt. 3100 m, 20 Mar. 1991, *C. Luer, J. Luer & A. Hirtz 15190* (MO). **Sucumbíos**: between Playón de San Francisco and El Carmelo, alt. 3200 m, 12 Apr. 1979, *B. Løjtnant, U. Molau & M. Madison 12295* (AAU, GB). **Imbabura**: Selva Alegre, alt. 2600 m, 17 Feb. 1978, *C. Luer 2600, 3915* (SEL); same area, alt. 2850 m, 6 Apr. 1984, *C. Luer, S. Dalström & T. Höijer 9986* (MO); Huagshi - Guantupugro, west of Otavalo, 20 Jan. 1980, *J. Jaramillo & E. Proaño 2007* (AAU, QCA); south slope of Volcán Cotacachi, alt. 3300 m, 22 Jan. 1988, *U. Molau, B. Eriksen & M. Fredrikson 2638* (AAU, GB); Lago Mojando, west of Otavalo, alt. 3300 m, 17 Feb. 1998, *C. Luer, J. Luer, A. Hirtz & J. del Hierro 18710* (MO).

Acronia sarcochila, an immensely flowered species apparently confined to northwestern Ecuador at high altitudes, is very similar to sympatric *A. grandiflora*. The former was first collected in 1920 by I. Holmgren, a sheet of which was annotated by Schlechter as "A. megachasma sp. nov." From *A. grandiflora*, it differs not only in much longer sepals (sometimes exceeding four centimeters) and wider and longer petals, but mainly in the morphology of the lip. The lip of *A. grandiflora* is usually five to seven millimeters long and nearly as wide, variably coarsely ciliate-pubescent, and with a distinct glenion at the base. The lip of *A. sarcochila* is smooth and convex with recurving margins, and sometimes reaches 15 millimeters in length. However, boundaries between the two are often indistinct, leaving the identifications of some specimens to rely on personal judgement.

Acronia scabrilinguis (Lindl.) Luer, comb. nov.

Ety.: From the Latin *scabrilinguis*, "scabrous-lipped," referring to the labelllum.

Bas.: *Pleurothallis scabrilinguis* Lindl., Comp. Bot. Mag. 2: 354, 1836.

Syn.: *Zosterophyllanthos scabrilinguis* (Lindl.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.

Plant small to medium in size, terrestrial to epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect or horizontal, 5-16 cm long, with a tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect or horizontal, rigid, thickly coriaceous, narrowly ovate, acute, 4-10 cm long, 1-2 cm wide, the base shallowly cordate, sessile. **Inflorescence** a single, successive, resupinate flower, subtended by a spathe 5-10 mm long; peduncles 1-3 mm long, concealed within the sheath; floral bracts thin, tubular, 4-7 mm long; pedicels 5-10 mm long; ovary 3-4 mm long; flowers purple, yellow, or brown; **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, 6-10 mm long, 2.5-7 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse, shallowly concave synsepal, 5-10 mm long, 4-8 mm wide, 4-veined; **petals** narrowly linear-triangular, acute, minutely denticulate, 3-7 mm long, 0.5-1.25 mm wide, 1-veined; **lip** ovate, obovate, triangular, oblong, subacute to obtuse, or round at the apex, 3-7 mm long, 2-4 mm wide, minutely verrucose with denticulate margins, with a glenion at the base, the base concave on the end, hinged to the base of the column; **column** stout, 1.5 mm long, 2 mm wide, the foot obsolescent, the anther, rostellum and stigmatic lobes apical.

PERU: without locality, 1835, *Matthews 1904* (Holotype: K; Isotypes: BR, W). *Cuzco*: Quispicanchis, Quine mil, alt. 643 m, *P. Nuñez V. 13772* (MO).
ECUADOR: **Carchi**: east of the pass above Maldonado, alt. 2450 m, 15 Jan. 1992, *C. Luer, J. Luer, A. & P. Jesup 16030* (MO). **Pichincha**: road cut west of Nono, alt. 3200 m, 9 Mar. 1976, *C. Luer, J. Luer & P. Taylor 798* (SEL); terrestrial at San Juan Pass, alt. 3420 m, 11 Jan. 1989, *C. Luer, J. Luer, A. & P. Jesup 13840* (MO); west of Calacalí, alt. 1800 m, 14 May 1988, *C. Luer, J. Luer & A. Hirtz 13321* (MO). **Napo**: north of Baeza, alt. 1500 m, 10 Aug. 1978, *C. Luer 3186* (MO).
COLOMBIA: **Antioquia**: north of Santa Rosa de Osa, alt. 2650 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14138* (MO); between La Union and Sonsón, alt. 2000 m, collected by E. Valencia, cultivated at Colomborquídeas, 5 May 1993, *C. Luer 16640* (MO); La Union, along stream west of Mesopotamia, alt. 2400 m, 8 Apr. 1988, *C. Luer, J. Luer & R. Escobar 13066* (MO); Urrao, Guangarales, alt 1600 m, collected by M. Zapata, cultivated at Colomborquídeas, 5 May 1993, *C. Luer 16652* (MO). **Risaralda**: Santa Rosa de Cabal, between Termales and Paramillo, alt. ca. 2300 m, *A. DeWilde 4317* (MO). Without locality, cultivated by S. Tsubota near Pereira, 10 May 1993, *C. Luer 16764* (MO). **Nariño**: Betania, alt. 2000 m, collected by J. Aguirre, cultivated at Colomborquídeas, 27 Mar. 1997, *R. Escobar 8308* (MO).

This species is locally abundant in the Andes of Colombia, through Ecuador into into Peru. Great masses of plants accumulate under the protection of tough grasses that grow along the edges of road embankments, often at altitudes over 3000 meters above sea level. Hundreds of the narrow leaves overlap as they protrude horizontally from under the vegetation. They are always with some flowers that vary in color from yellow through the reds to dark purple in the same population. Larger specimens grade into the variable *Acronia bivalvis*.

The ramicauls are slender, bearing a narrowly ovate, more or less pendent or spreading leaf that is shallowly cordate at the base. The three-veined dorsal sepal varies from acute to obtuse. Occasionally a faint, extra pair of veins is present. The petals are narrow, acute and minutely denticulate-erose. The minutely verrucose-denticulate lip is variable in shape, from triangular-ovate to obovate, or oblong-elliptical.

Acronia scaphipetala (Luer) Luer, comb. nov.

Ety.: From the Latin *scaphipetalus*, "with boat-shaped petals," referring to the concave petals.
Bas.: *Pleurothallis scaphipetala* Luer, Lindleyana 11: 94, 1996.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, suberect or horizontal, 4-6.5 cm long, with a loose, tubular sheath on the lower half and another 1-2 sheaths at the base. **Leaf** suberect or horizontal, rigid, thickly coriaceous, elliptical, obtuse, 3-3.5 cm long, 1.5-2.1 cm wide, the base broadly cuneate, sessile. **Inflorescence** a fascicle of successive, single, non-resupinate flowers, subtended by a spathe 10-11 mm long; peduncles 3-4 mm long, concealed within the sheath; floral bracts thin, tubular, 5-6 mm long; pedicels 5 mm long; ovary 4.5 mm long; **sepals** intensely mottled with purple-brown, fleshy, glabrous, lightly verrucose within above the middle, the middle sepal elliptical, obtuse, 7 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into a broadly ovoid, obtuse, concave synsepal, 6.5 mm long, 6.5 mm wide, 4-veined; **petals** purple-brown, elliptical, incurved, deeply concave, obtuse, 3.25 mm long, 2.25 mm wide, 1-veined, with the vein thickened externally and at the apex; **lip** purple-brown, thick, ovate, deeply concave, obtuse, abruptly apiculate, 3.5 mm long, 2.5 mm wide, with basal angles erect, obtuse, flanking the column, the disc with a low pair of converging calli above the middle within the cavity, transversely thickened across the base, the base hinged to the base of the column; **column** stout, 1.5 mm long, 1 mm wide, the foot obsolescent, the anther, rostellum and transverse stigma apical.

COSTA RICA: **Limón**: near Guápiles, "low altitude," collector unknown, flowered in cultivation at the Lankester Botanical Garden, 7 Mar. 1995, *C. Luer 17371* (Holotype: CR; Isotype: MO).

This species from lowland eastern Costa Rica is most closely allied to *Acronia excavata*. It is known only by the specimen cultivated at the Lankester Garden in Cartago. It is distinguished by the sepals that are only lightly verrucose within, and the concave petals and lip. The petals are basically similar to those of *A. dorothaea* and *A. excavata*, but they are considerably larger, wider, and more deeply concave, more or less enclosing the lip and column. The lip is deeply concave and apiculate with basal angles that embrace the column. Within the cavity a pair of low calli converge toward the apex.

Acronia scurrula (Luer) Luer, comb. nov.

Ety.: From the Latin *scurrula*, "a little clown," in allusion to the appearance of the flower.
Bas.: *Pleurothallis scurrula* Luer, Selbyana 3: 182, 1976.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-12 cm long, with a close, tubular sheath near the middle and 2 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, ovate, acute, 5-8 cm long, 2-3 cm wide, the base sessile, cordate. **Inflorescence** a successive single, non-resupinate flower, borne erect from a suberect spathe 1-1.5 cm long, at the base of the leaf; peduncles 2-3 mm long, concealed within the sheath; floral bracts thin, tubular, 6-8 mm long; pedicels 12-15 mm long; ovary 4-5 mm long; **sepals** pale yellow-green, glabrous, the middle sepal ovate-triangular, acute, with recurved margins, 11 mm long, 5 mm wide, 3-veined, the lateral sepals connate into a transversely ovate synsepal, 7 mm long, 9 mm wide, 4-veined, broadly rounded at the apex, concave centrally; **petals** green or red, glabrous, oblong-ovate, acute, 7 mm long, 3 mm wide, 1-veined, with recurved margins; **lip** uppermost, red with yellow margins, oblong, rounded at the apex, 3 mm long, 2 mm wide, the disc minutely subverrucose, sulcate centrally between a pair of longitudinal calli, callous thickened toward the base with a small glenion at the summit, the base acutely deflexed upon itself, hinged to the column-foot; **column** 1 mm long, 1.5 mm wide, the foot obsolescent, with the anther, rostellum and stigma apical.

PERU: Without locality, collected by Fred Fuchs, Jr., cultivated at J & L Orchids, Easton, CT, 18 Oct. 1975, *C. Luer 293-S* (Holotype: SEL). **Amazonas**: Bongara, eastern end of Lago Pomacocha, alt. 2330 m, 14 Apr. 1984, *T.B. Croat 58257* (MO); forest around Laguna Pomacochas, alt. 2250 m, 20 Mar. 1998, *H. van der Werff et al. 15231* (MO).

This not uncommon, little, Peruvian species is distinguished by the erect, non-resupinate flower held above the surface of the ovate leaf. The broadly rounded, uppermost synsepal stands behind the oblong lip which is acutely deflexed at the base. The middle sepal is acute and points downward while a petal recurves from either side.

Acronia semiscabra (Lindl.) Luer, comb. nov.

Ety.: From the Latin *semiscabrus*, "partly rough," referring to the labellum.
Bas.: *Pleurothallis semiscabra* Lindl., Orch. Linden. 2: 1846.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 13-19 cm long, with a close, tubular sheath near the middle and 2 other sheaths at the base. **Leaf** suberect to horizontal, coriaceous, ovate to narrowly ovate, acute, slightly acuminate, 7-9 cm long, 2.5-4 cm wide, the base sessile, cordate. **Inflorescence** a successive, single, non-resupinate flower, from a reclining spathe 1 cm long; peduncles 4-5 mm long, concealed within the spathe; floral bracts thin, tubular, 5 mm long; pedicels 9-10 mm long; ovary 6 mm long; **sepals** yellow, glabrous, the middle sepal broadly elliptical to suborbicular, rounded at the apex, slightly convex, 8-9 mm long, 7 mm wide, 3-veined, the lateral sepals connate into a transversely ovate, concave synsepal, rounded at the apex, 6-7 mm long, 8-8.5 mm wide, 4-veined; **petals** yellow, obovate-spathulate, obtuse, apiculate, 6-7 mm long, 3.25 mm wide near the apex, minutely verrucose with 3 elevated veins above the middle; **lip** yellow, subquadrate, broadly rounded at the apex, diffusely verrucose, 3-3.5 mm long, 2-3 mm wide, the disc shallowly sulcate, thickened toward the base with a elevated glenion, the base broadly truncate, shortly reflexed, concave on the end, hinged to the column-foot; **column** light green, 1 mm long, 2 mm wide, the foot thick, verrucose, with the anther, rostellum and stigma apical.

VENEZUELA: **Merida**: alt. 6,000-7,000 ft., 1844, *J. Linden 669* (Holotype: K; Isotypes: G, W): Without collection data, cultivated by G.C.K. Dunsterville at Hatillo, 24 July 1982, *C. Luer 8088* (SEL). **Trujillo**: Boconó-Trujillo road, on crest of divide, alt. 6,000 ft., Feb. 1961, *G.C.K. Dunsterville 597*.

This species from the mountains of western Venezuela is characterized by a yellow, non-resupinate flower borne from a reclining spathe at the base of a cordate leaf. The middle sepal is round and the uppermost synsepal behind the lip is transversely ovate. The petals are widest toward the apex and apiculate. The lip is subquadrate and diffusely verrucose.

Acronia sergioi (Luer & R.Escobar) Luer, comb. nov.

Ety.: Named in honor of the late Father Sergio Restrepo J., S.J. of Medellín, Colombia, who discovered this species.

Bas.: *Pleurothallis sergioi* Luer & R.Escobar, Orquideología 22: 272, 2003.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-6 cm long, with a close, tubular sheath below the middle and another at the base. **Leaf** rigid, thickly coriaceous, narrowly elliptical-oblong, acute, subconduplicate, 4.5-5.5 cm long, 0.7-0.8 cm wide, the base cuneate, shortly subcordate, sessile. **Inflorescence** a fascicle of 4-8 single, simultanous flowers borne from a small, fugacious spathe at the base of the leaf; peduncles ca. 1 mm long; floral bracts 2-3 mm long; pedicels 2-3 mm long; ovary 2.5 mm long; flower parts dull yellow, with the veins red-brown, **sepals** glabrous, the dorsal sepal ovate, subacute to obtuse, 4 mm long, 2.5 mm wide, 3-veined, the lateral sepals completely connate into an ovate synsepal similar to the dorsal sepal, 3.5 mm long, 3 mm wide, 4-veined; **petals** narrowly triangular, acute, 1.5 mm long, 0.5 mm wide; **lip** ovate, obtuse, 2.5 mm long, 1.75 mm wide, the disc very shallowly concave centrally, the base shallowly concave with a proportionately large glenion, hinged to the base of the column-foot; **column** stout, dorsally compressed, semiterete, 0.75 mm long, 1.5 mm wide, the anther and bilobed stigma apical.

COLOMBIA: without collection data, collected and cultivated by Father Sergio Restrepio, El Retiro, 23 July 1978, *C. Luer 2958* (Holotype: SEL).

Father Sergio Restrepio cultivated this plant in his collection near El Retiro, Colombia, but his collection data were unknown. It is characterized by a small habit; narrow, rigid, thickly coriaceous, more or less conduplicate leaves; and a fascicle of several, simultaneous, yellow flowers with red-brown stripes along the veins. The sepals are obtuse, the petals are much smaller and acute, an the lip is obtusely ovate.

Acronia serricardia (Schltr.) Luer, comb. nov.

Ety.: From the Latin *serra*, "a saw," and the Greek *kardia*, "a heart," in allusion to the "serrulate" petals and lip.

Bas.: *Pleurothallis serricardia* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 55, 1924.

Plant large, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, erect, 18-30 cm long, with a close, tubular sheath on the lower third and another 1-2 sheaths at the base. **Leaf** erect to suberect, coriaceous, oblong-ovate, subacute, acuminate, 7-15 cm long, 2.5-5 cm wide, the base sessile, deeply cordate. **Inflorescence** a solitary large, successive flower, subtended by a spathe 15-20 mm long; peduncles 2-4 mm long, concealed within the sheath; floral bracts thin, tubular, 5-10 mm long; pedicels 10-25 mm long; ovary 7 mm long; flowers yellow, often suffused with red or purple; **sepals** microscopically ciliate-pubescent to minutely pubescent externally, the dorsal sepal ovate to broadly ovate, subacute, 20-33 mm long, 10-18 mm wide, 7-veined, the lateral sepals connate into an ovate, acute lamina, 18-30 mm long, 7-12 mm wide, 6-veined; **petals** decurved, falcate-oblong, acute, denticulate, minutely pubescent, 9-18 mm long, 1.25-2 mm wide, 1-veined; **lip** dark red-orange to red-purple, ovate-oblong, obtuse, with decurved sides above the middle, 5.5-9.5 mm long, 3-4.5 mm wide, cellular-glandular, with denticulate margins, with a glenion at the base, the base subcordate, thickened and concave on the end; **column** stout, 2 mm long, 3 mm wide, the foot thick, minutely pubescent, the anther and stigma apical.

COLOMBIA: **Nariño**: near Ipiales on the Ecuadorian border, alt. 2900 m, Mar. 1923, *W. Hopp 172* (Holotype destroyed at B; neotype: ?). above Magnesium mine east of Ricaurte, alt. 1800 m, 1 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4511* (SEL); La Planada above Ricaurte, alt. 1950, 2 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4544, 4575* (SEL).

Acronia serricardia, apparently intermediate between *A. grandiflora* and *A. linguifera*, occurs in southernmost Colombia. Vegetatively, it is similar to the other related large-flowered species of the section. The flowers are also similar, but the sepals and petals are ciliate-scabrous. The lip is elongated with recurved sides as in *A. adonis*, or *A. linguifera*, but it, too, is ciliate and scabrous.

Acronia sigynes (Luer) Luer, comb. nov.

Ety.: From the Greek *sigynes*, "a spear," referring to the appearance of the habit.

Bas.: *Pleurothallis sigynes* Luer, Selbyana 3: 186, 1976.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-30 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, coriaceous, ovate to narrowly ovate, acute, 4-10 cm long, 1.5-4 cm wide, the base sessile, cordate. **Inflorescence** a fascicle of successive, single, widely spread flowers, 1-5 produced simultaneously, subtended by a spathe 7-10 mm long; peduncles 1-2 mm long, concealed within the sheath; floral bracts tubular, 3-5 mm long; pedicels 4-9 mm long; ovary 2.5-4 mm long; **sepals** light brown, more or less suffused with red-brown along the veins, glabrous, the dorsal sepal elliptical-ovate, acute, 6-9 mm long, 2.5-3.5 mm wide, 3-veined (occasionally incompletely 5-veined), the lateral sepals connate into an ovate, subacute synsepal, 6-9 mm long, 3.5-5 mm wide, 6-veined; **petals** yellow-brown, narrowly linear-triangular, oblique, acute, entire to microscopically denticulate, 2.25-3.5 mm long, 1 mm wide at the base, 1-veined; **lip** yellow to brown, cordate-ovate, subacute to obtuse, flat, 2-3 mm long, 1.5-1.75 mm wide, the surface minutely cellular-glandular, the base subcordate with a medium-sized glenion, flattened on the deflexed end, hinged to the column-foot; **column** transversely semiterete, 0.75-1 mm long, 0.75-1 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Pichincha**: along the old road between Quito and Santo Domingo, alt. 1500 m, 2 Mar. 1975, *C. Luer & R. Kent 295* (Holotype: SEL); same area, near Chiriboga, alt. 1600 m, 3 July 1967, *C.H. Dodson, N.H. Williams & R. Adams 3726, 3728* (MO, SEL). **Los Ríos**: Montañas de Ila, alt. 540 m, 24 May 1976, *C.H. Dodson 6126* (SEL). **El Oro**: below Piñas, alt. ??? m, 7 Mar. 1977, *C. Luer 1580* (SEL); same area, *C. Luer 6824* (SEL); same area, 20 Apr. 1989, cultivated in Chamblee, GA, *F L Stevenson 89-1221-2* (MO), C. Luer illustr. 16320.
COLOMBIA: **Norte de Santander**: between Abrego and Sardinata, alt. 1730 m, 12 Nov. 1981, *C. Luer, R. Escobar & D. Portillo 6676* (SEL); epiphytic in cloud forest, Alto de Santa Inez, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10312* (MO). **Cauca**: Bolívar, San Juán de Villalobos, collected by J. Aguirre, cultivated at Colomborquídeas, 26 Mar. 1997, *R. Escobar 8303* (MO).

Vegetatively, this relatively frequent species is similar to many others: an erect, ovate-cordate, acute leaf borne by a longer, slender ramicaul. It is distinguished by the brownish flowers, often a few produced simultaneously, of average size for the section. The dorsal sepal and synsepal are elliptical; the narrowly triangular petals are short, less than half as long as the synsepal; and the small lip is flat and cordate-ovate.

In some populations the leaf is distinctly longer and narrower than the ovate leaves usually seen. The dorsal sepal is three-veined, but frequently an incomplete, additional pair develops.

Acronia siphoglossa (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Greek *siphoglossa*, "a tube-like tongue," referring to the tubular lip.
Bas.: *Pleurothallis siphoglossa* Luer & R.Escobar, Orquideología 20: 82, 1996.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender to relatively stout, erect, 10-40 cm long, with a close, tubular sheath on the lower third and 1-2 other sheaths at the base. **Leaf** suberect to spreading, coriaceous, ovate to narrowly ovate, acute, slightly acuminate, 10-13 cm long, 3-7 cm wide, the base sessile, cordate to deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 10-15 mm long; peduncles 2-4 mm long, concealed within the sheath; floral bracts thin, tubular, 6-9 mm long; pedicels 8-12 mm long; ovary stout, 5-6 mm long; **sepals** microscopically ciliate-pubescent, yellow, red, purple to brown, the dorsal sometimes suffused with purple or brown along the veins, the dorsal sepal broadly ovate, obtuse, concave, 15-26 mm long, 10-16 mm wide, 5- to 7-veined, the lateral sepals connate into an ovate, acute lamina, 13-20 mm long, 8-13 mm wide, 4-(6-)veined; **petals** decurved, oblong-falcate, acute, denticulate-fimbriate, more or less minutely cellular-glandular, 7-12 mm long, 1.5-2.5 mm wide, 1-veined; **lip** erect, subovate, 6-8 mm long, 4-8 mm wide above the base, the margins denticulate, the sides revolute above the middle, meeting below to form a tube, the apex acute, more or less curved up, the disc with a broad glenion above the thickened base, the base broadly and deeply concave on the end to accommodate the bulbous column-foot; **column** stout, 1.5 mm long, 2-3 mm wide, the foot thick, bulbous, minutely pubescent, the anther and stigma apical.

COLOMBIA: **Santander**: epiphytic in cloud forest west of Velez toward Landazuri, alt. 2400 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10104* (Holotype: MO); Virolín, El Taladio, alt. 2200 m, collected by E. Valencia, cultivated at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5158* (MO). **Norte de Santander**: Alto de Santa Inez, alt. 2100 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10311* (MO). **Antioquia**: south of Yarumal, alt. 2500 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14146* (MO); Jardín, La Cifuentes, alt. 2350 m, collected by M. Zapata, 29 Dec. 1992, cultivated at Colomborquídeas, 29 Dec. 1992, *R. Escobar 5132* (MO).

VENEZUELA: without collection data, May 1967, *G.C.K. Dunsterville 76*
ECUADOR: **Morona-Santiago**: east of the pass east of Sigsig, alt. 2700 m, 15 May 1988, *C. Luer, A. Hirtz et al. 13349* (MO); above Chiguinda, alt. 2600 m, 11 Aug. 1990, *A. Hirtz 5054* (MO); same area, alt. 2700 m, 1 May 2004, *A. Hirtz et al., 8719* (MO). **Azuay**: near Gima, cultivated by Linder Suin, 6 Mar. 2001, *C. Luer 1977* (MO).

This species is illustrated in the Field Guide of *Orchids of Venezueala* (3: 767, 1979) and identified as *Pleurothallis grandiflora* [=*A. grandiflora* (Lindl.) Luer]. The species illustrated in *Venezuelan Orchids Illustrated* (4: 219, 1966), also identified as *P. grandiflora*, probably is *A. linguifera*.

Pleurothallis siphoglossa occurs in the Central Cordillera and the Eastern Cordillera of Colombia, adjacent Venezuela, and Ecuador. Although it does not grow intermixed with the closely allied *A. grandiflora*, the geographic ranges of the two species overlap. Vegetatively, the two species are indistinguishable. However, the very distinctive lip of *A. siphoglossa* permits easy recognition. Instead of ovate and more or less convex, the lip has acutely revolute sides above the middle, with the margins in apposition below to form a tube. The tube often curves up at the apex as seen in *A. deflexa* and *A. millei*.

Acronia solomonii Luer, sp. nov.

Ety.: Named for Dr. James Solomon of the Missouri Botanical Garden, who collected this species.

Inter species sectionis *Macrophyllae-Fasciculatae* Lindl., foliis anguste ovatis acutis ramicaulibus brevioribus, sepalis subacutis, petalis oblongis denticulatis, et labello grande elliptico crasso concavo distinguitur.

Plant large, lithophytic, caespitose; roots coarse. Ramicauls stout, erect, 15-32 cm long, with a tubular sheath below the middle and another at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, slightly acuminate, 10-13 cm long, 3-3.5 cm wide dry, the base sessile, cordate. **Inflorescence** a single, successive flower, subtended by a reclining spathe 15-17 mm long; peduncles ca. 2 mm long, concealed within the sheath; floral bracts ca. 5 mm long; pedicels 10-15 mm long; ovary 5-6 mm long; **sepals** fleshy, color not recorded, the dorsal sepal broadly ovate, subacute, concave, 11 mm long, 6 mm wide, 7-veined, the lateral sepals connate into an ovate, subacute synsepal, 11 mm long, 6 mm wide, 6-veined; **petals** oblong, acute, denticulate, 9 mm long, 1.75 mm wide; **lip** fleshy, thick, glabrous, at most microscopically cellular within, elliptical, subacute, 8 mm long, 3.5 mm wide, the disc shallowly concave with thick, elevated, minutely denticulate margins, the base truncate, shallowly concave on the end, hinged to the column-foot; **column** stout, 2.5 mm long, 2.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

BOLIVIA: **La Paz**: Sud Yungas, southeast of Unduavi, alt. 3000 m, growing on rocks of road embankment, 6 Nov. 1982, *J. Solomon 8699* (Holotype: MO; Isotype: SEL), C. Luer illustr. 20452.

Vegetatively similar to all those species characterized by a spreading, narrowly ovate leaf, this species is distinguished by subacute sepals with the dorsal multiveined; oblong, denticulate petals; and a large, elliptical lip that is shallowly concave and flat between elevated margins. It is known from only one collection at a high altitude in northcentral Bolivia.

Acronia sotarae (Schltr.) Luer, comb. nov.

Ety.: Named for Volcán Sotará, near Popayán, where the species was collected.

Bas.: *Pleurothallis sotarae* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 115, 1920.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 18-38 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to nearly horizontal, coriaceous, ovate, subacute, slightly acuminate, 7-15 cm long, 2-4 cm wide, the base sessile, cordate. **Inflorescence** a successive, single flower, subtended by a reclining spathe 1-1.5 cm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts tubular, 9-10 mm long; pedicels 10-20 mm long; ovary 5-6 mm long; **sepals** yellow-brown, cellular-pubescent, the dorsal sepal ovate, acute, 22-24 mm long, 12 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 22-24 mm long, 9-12 mm wide, 4-veined; **petals** red-purple, decurved, narrowly linear, acute, denticulate, 12-13 mm long, 1-1.5 mm wide, 1-veined; **lip** red-purple, cellular-glandular, thick, oblong, obtuse, 13.5-15 mm long, 5-6 mm wide, the disc convex, with a glenion above the base, the base truncate, concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, with the anther, rostellum and stigma apical.

COLOMBIA: **Cauca**: in dense, moist forest, west slope of Volcán of Sotará, central Andes of Popayán, alt. 2800-3000 m, June-July 18??, *F.C. Lehmann 6219* (Holotype destroyed at B: Lectotype: K; Isolectotype: AMES), C. Luer illustr. 17261; Páramo de Barbillas, alt. 3070 m, 27 July 1978, *C. Luer, J. Luer, R. Escobar & A. Lehmann de Sarria 3036* (SEL); Páramo de Barbillas, alt. 3150 m, 13 Nov. 1982, *C. Luer & R. Escobar 8384* (SEL).

This large species from southern Colombia, first collected by Lehmann, is noted for the acute sepals each about two and a half centimeters long; a three-veined dorsal sepal; decurved, slender, denticulate petals; and an oblong lip about one and a half centimeters long. It was accurately illustrated by Schlechter. It is similar to *A. adonis*, but instead of an erect, tubular lip, the large, oblong lip lies within the synsepal.

Acronia sphaerantha (Luer) Luer, comb. nov.

Ety.: From the Greek *sphaeranthos*, "sphere-like flower," referring to the flower.

Bas.: *Pleurothallis sphaerantha* Luer, Selbyana 1: 292, 1975.

Plant small, epiphytic, caespitose; roots slender. Ramicauls suberect, slender, 4-7 cm long, enclosed below the middle by a tubular sheath and another 1-2 sheaths at the base. **Leaf** spreading, thickly coriaceous, rigid, ovate, acute, 3-4.5 cm long, 1.5-2.8 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 6-8 mm long; peduncles ca. 1 mm long; floral bracts thin, tubular, 5 mm long; pedicels 5 mm long; ovary 1.5 mm long; flowers subglobose, yellow or purple; **sepals** glabrous, the dorsal sepal broadly ovate to orbicular, obtuse, concave, 4 mm long, 4 mm wide, 3-veined, the lateral sepals connate into a similar, suborbicular, obtuse synsepal, 4 mm long, 4 mm wide, 4-veined; **petals** ovate, acute, entire, 4 mm long, 1.2 mm wide, 1-veined; **lip** ovate-oblong, obtuse, 2.5 mm long, 1.5 mm wide, the disc featureless, the base truncate with a small glenion, hinged on the end to the column-foot; **column** erect, stout, terete, 1.5 mm long, 1 mm broad, the foot thick, obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **Pastaza**: epiphytic in forest east of Puyo, alt. 500 m, 29 July, 1975, *C. Luer, G. Luer & S. Wilhelm 486* (Holotype: SEL); Mera, alt. ca. 1100 m, 25 May 1968, *G. Harling, G. Storm & B. Ström 9861* (GB); **Morona-Santiago**: north of Macas, near Sinai, alt. ca. 900 m, cultivated at Ecuagenera, Gualaceo, 5 Mar. 2001, *C. Luer 19701* (MO).

This small species is apparently endemic in the eastern lowlands of Ecuador. It is characterized by the horizontal, rigid, cordate leaf with a small, spherical flower borne at the base. The dorsal sepal and synsepal are suborbicular and concave. The proportionately large lip fills the synsepal and is fitted snugly within the concave apex.

Acronia stelidilabia (Luer) Luer, comb. nov.

Ety.: Named for the similarity of the lip to a lip of the genus *Stelis*.

Bas.: *Pleurothallis stelidilabia* Luer, Selbyana 5: 180, 1979.

Syn.: *Pleurothallis sculptilis* Luer, Selbyana 7: 122, 1982.

Ety.: From the Latin *sculptilis*, "sculptured," in allusion to the concave surfaces of the lip.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-17 cm long, with a close, tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** flat, thickly coriaceous, cordate-ovate, acute, 5-6.5 cm long, 2-3.7 cm wide, horizontal to more or less deflexed from the ramicaul, the base deeply cordate, sessile. **Inflorescence** a fascicle of solitary, non-resupinate, successive flowers borne from an erect to suberect, conduplicateceous spathe 8-13 mm long, 5-6 mm broad, at the base of the leaf; peduncles 3-7 mm long, confined within the spathe; floral bract inflated, 5 mm long; pedicel 4-5 mm long; ovary cellular-glandular, 2-3 mm long; **sepals** yellow-white, more or less lightly suffused with rose, cellular-glandular to cellular-papillose within, the dorsal sepal ovate, obtuse, shallowly concave, 6 mm long, 4.5 mm wide, 3-(5-)veined, the lateral sepals connate completely into a deeply concave ovoid, obtuse to rounded synsepal, 6-7 mm long, 6-8 mm wide, 4-veined; **petals** pale yellow, minutely verrucose, elliptical, acute, 4.5-5 mm long, 2 mm wide, 1-veined; **lip** pale yellow, transversely cordate-triangular, the apex and basal angles rounded, 2.5-3 mm long, 3.5 mm wide across the base, the basal lobes more or less concave, to either side of the column, the disc concave centrally, the base subcordate with a short, thick, deflexed claw, firmly hinged to the column-foot; **column** stout, 2 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

ECUADOR: **Zamora-Chinchipe**: epiphytic in cloud forest above Valladolid, alt. ca. 2000 m, July 1975, collected by W. Teague, L. Figueroa & D. Welisch, cultivated by W. Teague in San Francisco, CA, 12 Dec. 1978, *C. Luer 3635* (Holotype: SEL); epiphytic in cloud forest east of Yangana, alt. 2480 m, 4 Mar. 1982, *C. Luer, A. Andreetta, D. D'Alessandro & S. Dalström 7180* (SEL, type of *P. sculptilis*); above Valladolid, alt. 2100 m, 19 May 1986, *D. D'Alessandro 671* (MO).
Loja: Cachaco, south of Yangana toward Valladolid, alt. 2450 m, 24 July 1985, *C.H. Dodson, A. Embree & D. D'Alessandro 16025* (MO).

This species was first discovered along the old *camino de herradura* between Valladolid and Yangana before construction of the road was begun. It is closely related to *Acronia cardiostola* and its affinities, but it is distinguished from all of them by the flat, thickly coriaceous, cordate leaves, and a small, pale yellow, non-resupinate flower with the uppermost synsepal deeply concave and hoodlike. The non-reflexed petals are acute and minutely verrucose. The thick, transverse lip is similar to that of *A. cardiostola*.

Acronia stellata (I. Ramírez & Carnevali) Luer, comb. nov.
Ety.: From the Latin *stellatus*, "stellate," referring to the shape of the flower.
Bas.: *Pleurothallis stellata* I. Ramírez & Carnevali, Novon 13(4): 417, 2003.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-12 cm long, with 2 thin tubular sheaths below the middle and another at the base. **Leaf** horizontal, coriaceous, narrowly ovate, acute, 7-9 cm long, 2-2.5 cm wide, the base cordate, sessile. **Inflorescence** a solitary, resupinate flower produced successively from a reclining spathe 2 cm long, at the base of the leaf; peduncle unknown; floral bract unknown; pedicel 10 mm long; ovary ca. 3 mm long; flower deep purple; **sepals** glabrous (microscopically papillose), the dorsal sepal ovate, acuminate, acute, 12 mm long, 6 mm wide, 5-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, 12 mm long, 5 mm wide, 6-veined; **petals** narrowly ovate, acute, acuminate, thick, finely ciliate, 8.5 mm long, 1.8 mm wide, 1-veined; **lip** fleshy, finely glandular, subovate-triangular, obtuse, 2 mm long, 2 mm wide expanded, the base broadly truncate with a transverse ridge, concave on the end, hinged to the base of the column; **column** stout, 1.5 mm long, with a broad, thick base.

VENEZUELA: **Dist. Fed.**: above Limón, forest at ca. 4,500 ft., Mar. 1961, *G.C.K. Dunsterville 610* (Holotype: AMES)

This species, apparently endemic in coastal Venezuela, was collected and illustrated by Dunsterville in 1961, published in *Novov* in 2003, and used again here, courtesy of AMES. His sketch #610 has been modified for the present illustration. The flower is distinguished by a deep purple color that was artistically described by him. The habit with a narrowly ovate, horizontal, cordate leaf is commonly seen in the section. The sepals and petals are acute and widely expanded. The lip is more or less triangular with suberect lateral angles.

Acronia stenota (Luer) Luer, comb. nov.
Ety.: From the Greek *stenotos*, "narrow," referring to the slender vegetative and floral parts.
Bas.: *Pleurothallis stenota* Luer, Selbyana 3: 394, 1977.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-8.5 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 6-9 cm long, 1.2-1.4 cm wide, the base sessile, rounded to shallowly cordate. **Inflorescence** a fascicle of successive, single flowers, 3-4 sometimes borne simultaneously, subtended by a spathe 7-8 mm long; peduncles 1-2 mm long, concealed within the spathe; floral bracts thin, tubular, 3-4 mm long; pedicels 10-11 mm long; ovary 3 mm long; **sepals** pale orange-brown, glabrous, the dorsal sepal narrowly ovate, acute, 12 mm long, 3 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute lamina, 11 mm long, 4.5 mm wide, 4-veined; **petals** orange, narrowly triangular, acute, 4 mm long, 1 mm wide, 1-veined; **lip** light tan, oblong, obtuse to rounded at the apex, 3.5 mm long, 2 mm wide, the disc featureless, the base subtruncate with a glenion, shallowly concave on the end to accommodate the column-foot; **column** stout, 1 mm long, 1 mm wide, the foot thick, bulbous, minutely pubescent, the anther, rostellum and stigma apical.

ECUADOR: **Azuay**: epiphytic in an old orange grove, old road between Guayaquil and Cuenca, alt. ca. 500 m, 1 Mar. 1977, *C. Luer, J. Luer & K. Cordoba 1584* (Holotype: SEL); forest of Choucayacu, west Andes above Naranjal, alt. 500 m, *F.C. Lehmann 4507* (K). **Chimborazo**: *Spruce s.n.* (K). El Oro: west of Piñas, alt. 900 m, 8 Oct. 1979, *C.H. Dodson, A. Gentry & G. Shupp 9001* (MO). **Napo**: east of El Chaco, road to Lago Agrio, alt. 1700 m, 7 Nov. 1974, *A. Gentry 12592* (MO).

This species is apparently endemic in southwestern Ecuador at low altitudes. It is distinguished by the slender ramicauls and erect, narrowly ovate leaves that are shallowly cordate at the base. Several light orange or tan flowers are often produced simultaneously. The dorsal sepal, synsepal and the petals are narrowly ovate, and the lip is oblong with the apex rounded.

Acronia subtilis (C.Schweinf.) Luer, comb. nov.

Ety.: From the Latin *subtilis*, "fine, delicate," referring to the habit.

Bas.: *Pleurothallis subtilis* C.Schweinf., Fieldiana Bot. 28: 188, 1951.

Syn.: *Zosterophyllanthos subtilis* (C.Schweinf.) Szlach. & Marg., Polish Bot. J. 46(2): 121, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-20 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, suberect, to spreading, coriaceous, narrowly linear with revolute sides, acute, 6-20 cm long, 5-8 mm wide without expanding the sides, the base sessile, shortly cordate. **Inflorescence** a fascicle of successive, single, suborbicular flowers, subtended by a spathe 5-8 mm long; peduncles 2-3 mm long, concealed within the sheath; floral bracts 5 mm long; pedicels 4-5 mm long; ovary 2 mm long; **sepals** pale yellow-green to yellow-orange, fleshy, glabrous, the dorsal sepal ovoid, deeply concave, with the apex rounded, 3.5 mm long, 2.5 mm wide unexpanded, 3-veined, the lateral sepals connate into a deeply concave, broadly ovate, obtuse synsepal, 3 mm long, 3 mm wide unexpanded, 2-veined; **petals** ovate-triangular, acute, entire, 3 mm long, 1 mm wide, 1-veined; **lip** thick, ovoid, rounded at the apex, 2.3 mm long, 2 mm wide, the disc verrucose, shallowly sulcate centrally, the base truncate, acutely deflexed into a broad, rounded claw, hinged to the column-foot; **column** terete, 2 mm long, the foot thick, convex, long-pubescent, with the anther, rostellum and stigma apical.

VENEZUELA: **Mérida**: epiphytic in forest near the summit of Cerro San Isidro above La Carbonera, alt. 2430-2475 m, 22 Apr. 1944, *J.A. Steyermark 56030* (Holotype: F; Isotypes: AMES, NY, VEN); La Carbonera near Mérida, alt. 7,000 ft., May 1961, *G.C.K. Dunsterville 625*;ierra del Norte, alt. 2900 m, 6-8 Oct. 1952, *L.H. Humbert 26733* (AMES). **Trujillo**: above Escuque, between Escuqui and La Mesa de San Pedro, alt. 1300-1650 m, 20 Feb. 1971, *J.A. Steyermark et al. 104691* (K, VEN). **Táchira**: vicinity of Pregonero, Valle del Río Negro, alt. 2650 m, 10 Oct. 1965, *L. Bernardi 11030* (G, K). Data lost, Nov. 1994, (K), C. Luer illustr. 17288.

This species from western Venezuela is distinct both vegetatively and florally. The long, narrow leaves with revolute sides more or less spread from the slender ramicauls that bear them. Vegetatively, it is inseparable from *Acronia calamifolia* from the neighboring Eastern Cordillera of Colombia, and from Ecuadorian *A. lemniscifolia* with more pendent leaves.

The flowers of *Acronia subtilis* are suborbicular with the deeply concave dorsal sepal and synsepal gaping to break the sphere. From between the two halves the acute petals protrude. The fleshy lip is thickly, ovoid and verrucose. The base is sharply deflexed into a broadly concave claw. It is sigmoid in the lateral view.

Acronia suinii Luer, sp. nov.

Ety.: Named for Linder Suin of Gima, Azuay, who discovered and cultivates this species.

Species haec *Acronia nephroglossae* (Schltr.) Luer similis, sed sepalis proportione latioribus, petalis duplo latioribus et labello non-papillosis suborbiculari basi non-cordato differt.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect to suberect, more than 25 cm long, with a tubular sheath below the middle and 2 other sheaths at the base. **Leaf** suberect to spreading, thickly coriaceous, ovate, acute, acuminate, 16 cm long, 7 cm wide, the base sessile, cordate. **Inflorescence** a single flower, subtended by a reclining spathe 1.7 cm long; peduncles ca. 3 mm long, concealed within the sheath; floral bracts 10 mm long; pedicels 12 mm long; ovary 7-8 mm long; **sepals** yellow, veined and lightly suffused with tan, subverrucose along the veins, fleshy, glabrous externally, cellular-

papillose within, the dorsal sepal broadly ovate, obtuse, concave, 19-20 mm long, 16 mm wide unexpanded, 11-veined, the lateral sepals connate into an ovate, subacute synsepal, 19 mm long, 13 mm wide, 6-veined; **petals** yellow, fleshy, oblong, round at the apex, glabrous to the naked eye, microscopically subverrucose, 11 mm long, 5 mm wide; **lip** yellow-orange, glabrous, at most microscopically subverrucose, suborbicular, the apex rounded, 8 mm long, 8.5 mm wide, the disc slightly convex, the base truncate, shallowly concave on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Azuay**: near Gima, alt. ca. 3000 m, collected and cultivated by *Linder Suin 803*, 6 Mar. 2001, *C. Luer 19772* (Holotype: MO).

This large species, similar to the relatively frequent *Acronia nephroglossa*, is apparently rare on the eastern slopes of the Andes of southern Ecuador. It is distinguished by slightly smaller, yellow flowers with proportionately wider, obtuse sepals. The petals are broader and without papillae. The lip is suborbicular, essentially smooth and also devoid of papillae, with a truncate, non-cordate base. The species is most similar to *A. llanganatensis*, but differs in the suborbicular lip without decurved sides.

Acronia tandapiensis Luer & Hirtz, sp. nov.

Ety.: Named for the community of Tandapi, near where the species was collected.

Species haec *Acroniae matudanae* (C.Schweinf.) Luer affinis, sed folio minore, petalis denticulatis et labello late ovato differt.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-16 cm long, with a close, tubular sheath below the middle and another at the base. **Leaf** suberect, coriaceous, narrowly ovate, acute, 5-7 cm long, 1.5-2 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive, red-purple flower; peduncles obscure within the 1 cm long spathe at the base of the leaf; floral bract 5 mm long; pedicel 10 mm long; ovary 3.5 mm long; **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute, 7 mm long, 4 mm wide, 3-veined, the lateral sepals completely connate into an ovate synsepal, 6.5 mm long, 6 mm wide, 6-veined; **petals** decurved, linear-oblong, acute, 5.5 mm long, 1 mm wide, with the margins denticulate; **lip** ovate, obtuse, thick, 3.75 mm long, 3.5 mm wide, the disc shallowly channeled centrally, the base concave with a small glenion, hinged to the base of the column-foot; **column** stout, semiterete, 1 mm long, 1.5 mm wide, the anther and bilobed stigma apical.

ECUADOR: **Pichincha**: below Tandapi, alt. 1600 m, 27 Feb. 1986, *C. Luer, J. Luer & A. Embree 12066* (Holotype: MO).

This species from the western slopes of the Andes of Ecuador is similar to the variable, widely distributed *A. matudana*, but it differs from the latter by the small, narrowly ovate leaves and broader, denticulate petals. It had been considered to be a variation of *A. matudana* because the lip is thick and arcuate, similar to that of the latter.

Acronia teaguei (Luer) Luer, comb. nov.

Ety.: Named in honor of Walter Teague of San Francisco, CA, who collected this species.

Bas.: *Pleurothallis teaguei* Luer, Lindleyana 11: 187, 1996.

Plant very large, epiphytic to terrestrial, caespitose; roots unknown. Ramicauls erect, stout, 30-50 cm long, with a close, tubular sheath ca. 12 cm long covering the middle third, and 2-3 sheaths at the base, 30-35 cm long. **Leaf** horizontal to spreading, coriaceous, cordate-ovate, acute, 25-30 cm long, 12-16 cm wide, the base deeply cordate, sessile. **Inflorescence** a fascicle of single, successive, resupinate, dark purple flowers, from a reclining spathe 2 cm long, at the base of the leaf; peduncles 1 cm long, concealed within the spathe; floral bracts 1 cm long; pedicel 4 cm long; ovary 1-1.8 cm long; **sepals** glabrous, the dorsal sepal broadly ovoid, obtuse, deeply concave, 28-35 mm long, 28-30 mm wide, 13- to 15-veined, the lateral sepals connate into an ovate, subacute synsepal 27-32 mm long, 18-20 mm wide, 8-veined, convex above the base; **petals** glabrous, tubular, convolute, obovate if expanded, obtuse, 13.5 mm long, 3.5 mm wide, unexpanded; **lip** thick, transversely obovoid, convex, 8 mm long, 12 mm wide, the broadly rounded apex revolute, shallowly foveolate, the base truncate, deflexed, shortly unguiculate, hinged to the column-foot; **column** stout, 3 mm long, 4 mm broad, the anther and bilobed stigma apical, the foot thick, obsolescent.

ECUADOR: **Esmeraldas**: along road to Cachaco southeast of Lita, alt. 1550 m, 18 Nov. 1991, collected by W. Teague, M. Behar, S. Beckendorf, R. Hamilton & J. Leathers, cultivated in San Francisco by W. Teague s.n. (Holotype: MO), C. Luer illustr. 16301; same locality, 15 Aug. 1986, *A. Hirtz 2920* (MO).

This huge species is apparently endemic in northwestern Ecuador. It is distinguished by large, deeply cordate, spreading leaves with two or three immense, deep purple flowers borne on top of the leaf. The suborbicular, dorsal sepal is deeply concave and multiveined. The ovate synsepal is convex above the base, and the tubular, convolute petals are bent as they lie over the base behind the lip. The lip is thick, transversely obovate and convex with a broadly rounded, revolute apex.

Acronia telamon (Luer) Luer, comb. nov.

Ety.: From the Greek *telamon*, "a strap for a sword," in allusion to the strap-like leaves.
Bas.: *Pleurothallis telamon* Luer, Selbyana 5: 185, 1979.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls purple, stout, suberect to horizontal, 9-20 cm long, enclosed below the middle by a closely appressed, tubular sheath, and 2-3 other sheaths at the base. **Leaf** horizontal to pendent with weight, suffused with purple, coriaceous, narrowly linear-ovate, acute, 12-21 cm long, 2.8-3.6 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single, successive flower, subtended by a spathe 5-6 mm long; peduncles ca. 2 mm long, concealed within the spathe; floral bracts thin, tubular, 6-7 mm long; pedicels 8-10 mm long; ovary 3 mm long; **sepals** light yellow, glabrous, the dorsal sepal ovate, subacute, 15 mm long, 8 mm wide, 3-veined, the lateral sepals connate into an oblong-ovate, subacute to obtuse synsepal, 13.5 mm long, 7 mm wide, 4-veined; **petals** light green, narrowly oblong, slightly oblique, acute, denticulate, minutely papular, 11 mm long, 1.5 mm wide, 1-veined; **lip** red-purple, cellular-glandular, elliptical-oblong, obtuse, 8 mm long, 3.25 mm wide, with a glenion at the base, the base subtruncate, concave on the end, hinged to the column-foot; **column** stout, 1 mm long, 2 mm wide, foot 2 mm long, the anther and stigma apical.

PANAMA: **Coclé**: cloud forest near El Copé, May 1977, collected by R.L. Dressler, flowered in cultivation 29 Oct. 1977, *C. Luer 2112* (Holotype: SEL).

This species is known from a single collection in central Panama by Dressler. Although it has much in common with a narrow-leaved variation of *Acronia bivalvis*, known in Central America as *Pleurothallis angusta*, the strong habit with a narrowly linear, more or less pendent leaf suffused with purple is distinctive. The flower of *A. telemon* is relatively large of basic morphology as in *A. bivalvis*, but the proportionately long petals are narrowly oblong and denticulate, and the lip is large and elliptical-oblong.

Acronia titan (Luer) Luer, comb. nov.

Ety.: Named for Titan of Greek mythology, noted for his immense size.
Bas.: *Pleurothallis titan* Luer, Selbyana 3: 400, 1977.

Plant large, epiphytic, caespitose; roots numerous, slender. Ramicauls stout, 18-60 cm long, with a close, tubular sheath below the middle and 2-3 others at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, slightly acuminate, 15-25 cm long, 7-14 cm wide, the base deeply cordate, sessile. **Inflorescence** a successive, solitary flower, subtended by a reclining spathe 2-3 cm long; peduncle 3-5 mm long within the spathe; pedicel 18-25 mm long; floral bract tubular, 7-15 mm long; ovary 8-11 mm long; **sepals** yellow-green, yellow, to pale rose-brown, glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, 25-35 mm long, 15-21 mm wide, 7- to 9-veined, the lateral sepals connate into an ovate synsepal, 25-35 mm long, 14-23 mm wide, 8- to 10-veined; petals narrowly triangular, acute, 15-20 mm long, 3-4 mm wide; 3-veined; lip yellow, oblong-obovate or subpandurate, 11-14 mm long 6-8.5 mm wide, the apex subacute to obtuse, with thickened, incurved margins, the disc concave above the middle, convex below the middle, with a small glenion at the base, the base subtruncate, flat on the end, hinged to the column-foot, column stout, 1 mm long, 3 mm wide, the foot thick.

PANAMA: **Chiriquí**: Cloud forest above the Fortuna dam site, alt. 1000 m, collected Aug. 1976 by R.L. Dressler s.n., flowered in cultivation, 2 Dec. 1976, *C. Luer 400-S* (Holotype: SEL); between Gualaca and Fortuna Dam site on Río Chiriquí, alt. 1300 m, 9 Apr. 1980, *T.B. Croat 49988* (MO).
COLOMBIA: **Valle del Cauca**: Dagua, Quebrada Moja Huevo, alt. 1200 m, 31 Aug. 1996, *N. Paz, L. Forero & W. Mina 643* (CUVC).

This large-flowered species occurs not uncommonly in the Western Cordillera of Colombia, and infrequently as far as westernmost Panama. It can be compared to a gigantic *Acronia cardiothallis*. The dimensions of the flowers are twice to thrice larger than those of the latter. The shield-shaped lip is concave and usually widest above the middle with thick, incurved margins; below the middle the lip is convex.

Acronia tonduzii (Schltr.) Luer, comb. nov.

Ety.: Named for Adolphe Tonduz of l'Institut Phytogeographique de Costa Rica who collected this species.

Bas.: *Pleurothallis tonduzii* Schltr., Beih. Bot. Centralbl. 36(2): 397, 1918.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls purple, slender, erect, 8-20 cm long, with a close, tubular sheath below the middle and 2-3 other sheaths at the base. **Leaf** erect, thickly coriaceous, narrowly linear-ovate, acute, 10-18 cm long, 2-3.8 cm wide, the base sessile, shallowly cordate. **Inflorescence** a successive, single flower, subtended by a spathe 1-1.5 cm long, at the base of the leaf; peduncles 2-4 mm long, concealed within the spathe; floral bracts thin, tubular, 5-7 mm long; pedicels 10-11 mm long; ovary 4 mm long; **sepals** dull yellow, suffused with brown or purple, mostly along the veins, glabrous, the dorsal sepal ovate, concave, subacute, 11-13 mm long, 8-9 mm wide, 7-veined, the lateral sepals connate into an ovate, subacute lamina, 10-12 mm long, 7-8 mm wide, 4-veined; **petals** red-brown, oblong, subacute, serrate, 8 mm long, 2 mm wide, 1-veined; **lip** deep purple, thick, rigid, erect, pandurate with the sides and the subacute apex revolute, 5 mm long, 4 mm wide unexpanded, with the margins minutely denticulate, the disc convex, minutely verrucose, the base subtruncate, shallowly concave on the end; **column** stout, 1 mm long, 2 mm wide, the foot thick, the anther, rostellum and stigma apical.

COSTA RICA: **Alajuela**: San Ramón, 1868, *A. Endres 22 (61)* (W); San Ramón, alt. 1500-1600 m, May 1913, *A. Tonduz s.n.* (Holotype of *A. tonduzii* destroyed at B, lectotype here designated: CR; AMES 23680, illustr. of type.)
PANAMA: **Chiriquí**: along Río Chiriquí west of Volcán, alt. 1500 m, 12 Sept. 1976, *C. Luer & H. Butcher 1200* (SEL); in arroyo, llanos del Volcán, alt. 1500 m, 13 Sept. 1976, *C. Luer & H. Butcher 1229* (SEL).

This species is relatively frequent in western Panama and Costa Rica where it was first collected by Endres circa 1869, then a half-century later by Tonduz. It is characterized by the long, narrow, erect leaves, and a flower with a prominent, dark purple, verrucose lip held erect in the center. The sides of the lip are revolute to create the pandurate shape, and the apex is similarly acutely revolute.

Acronia tragulosa (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *tragulosus*, "with javelins," referring to the habit.

Bas.: *Pleurothallis tragulosa* Luer & Hirtz, Lindleyana 11: 189, 1996.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-33 cm long, with a close tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 7-13 cm long, 1-1.5 cm wide, the base narrowly rounded, sessile. **Inflorescence** a fascicle of successive, single flowers, subtended by a narrow spathe 10-12 mm long; peduncles 2-3 mm long; floral bracts tubular, 9-10 mm long; pedicels 20-30 mm long; ovary densely short-pubescent, 5 mm long; **sepals** red-purple, glabrous, the dorsal sepal ovate, acute, 13 mm long, 6 mm wide, 7-veined, the lateral sepals connate into an ovate, acute synsepal 11.5 mm long, 5.25 mm wide, 6-veined; **petals** red-purple, obliquely triangular, acute, 3.5 mm long, 2 mm wide, 3-veined; **lip** dark purple-brown, transversely ovate, 1.5 mm long, 3 mm wide, the apex broadly rounded with a minute, indistinct apiculum, the disc with a small glenion, the base acutely deflexed, hinged to the column-foot; **column** stout, terete, 0.5 mm long, the foot thick, obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **Esmeraldas**: epiphytic in wet forest west of Lita on the road to San Lorenzo, alt. 700 m, 12 Jan. 1992, *C. Luer, J. Luer, A. Hirtz et al. 15567* (Holotype: MO); same area, alt. 800 m, 13 Aug. 1986, *A. Hirtz 2956* (MO); same area, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, C. Dodson & A. Hirtz 12402* (MO); same area, terrestrial on road embankment, alt. 700 m, *C. Luer, J. Luer & A. Hirtz 15162* (MO).

This species, found in the wet forest at a low altitude west of Lita in northwestern Ecuador, is distinguished by the tall, slender ramicauls that bear narrowly ovate leaves, and long-pedicellate flowers. The dorsal sepal is ovate with seven nerves, and the synsepal is slightly smaller. The petals are small, triangular and acute. The lip is transversely ovate.

Acronia transversilabia (Carnevali & G.A.Romero) Luer, comb. nov.

Ety.: From the Latin *transversilabius*, "with transverse lip," referring to the lip if expanded.

Bas.: *Pleurothallis transversilabia* Carnevali & G.A.Romero, Orch. Venez. ed. 2, 3: 1145, 2000.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-8 cm long, with a close tubular sheath below the middle and another at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 5 cm long, 1.8 cm wide, the base rounded, shallowly cordate, sessile. **Inflorescence** a successive, single, non-resupinate flower, subtended by a spathe 6 mm long; peduncles 1 mm long; floral bracts tubular, 3-4 mm long; pedicels 5 mm long; ovary 2.5 mm long; **sepals** yellow, glabrous, the dorsal sepal elliptical, obtuse, 4 mm long, 2.6 mm wide, 3-veined, the lateral sepals connate into an elliptical-ovate, obtuse synsepal 3.6 mm long, 3 mm wide, 4-veined; **petals** yellow, oblong, acute, entire, 2 mm long, 0.5 mm wide, 1-veined; **lip** yellow, transversely oblong to bilobed with the sides or lateral lobes curved up flanking the column, 1.5 mm long, 3 mm wide expanded, the apex broadly rounded, the disc concave centrally beyond a transverse callus above a short claw, the base subtruncate, shallowly concave on the end, hinged to the column-foot; **column** stout, terete, about 1 mm long and wide, the foot thick, the anther, rostellum and stigma apical.

VENEZUELA: **Carabobo**: near Yaracuy, between Bejuma and Salom, cultivated at El Hatillo, 27 July 1982, *G.C.K. Dunsterville 1008* (SEL), C. Luer illustr. 8112. **Falcón**: Sierra de SAn Luis, between Zambrano and Curimagua, alt. 1200-1500 m, 9 Aug. 1993, *G. Carnevali et al. 3269* (MO, SEL, VEN). Without collection data, cultivated in Heerjansdam, Holland, 2 Aug. 1998, by *P. Dubbeldam 94180* (MO), C. Luer illustr. 18892.

The lip of **Acronia tridentata** is variable in width in the wide distribution of the species in northern and Amazonian South America. It is broadly ovate with the sides, or lateral lobes, variously elongated or expanded and curved upward around the column. A collection with an extreme variation was segregated as *Pleurothallis transversilabia* [=*A. transversilabia*]. All degrees of expansion of the sides of the lip have been seen, and several have been illustrated. A collection of them is cultivated by Piet Dubbeldam in the Netherlands. There are no vegetative or other floral variations noted in plants with the transverse lips.

Acronia tridentata (Klotzsch) Luer, comb. nov.

Ety.: From the Latin *tridentatus*, "tridentate," referring to the tip of the leaves.
Bas.: *Pleurothallis tridentata* Klotzsch, Allg. Gartenzeitung 8: 289, 1840.

Syn.: *Pleurothallis ionantha* Rchb.f., Linnaea 22: 830, 1849.
Ety.: From the Greek *ionanthos*, "violet flower," referring to the purple suffusion of the flowers.

Syn.: *Pleurothallis nephrocardia* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 35, 1919.
Ety.: From the Greek *nephrocardia*, "kidney-heart," referring to the reniform labellum.
Syn.: *Zosterophyllanthos ionanthus* (Rchb.f.) Szlach. & Marg., Polish Bot. J. 46(2): 119, 2001.
Syn.: *Zosterophyllanthos nephrocardius* (Lindl.) Szlach. & Marg., Polish Bot. J. 46(2): 120, 2001.
Syn.: *Zosterophyllanthos tridentatus* (Klotzsch) Szlach. & Marg., Polish Bot. J. 46(2): 121, 2001.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-11 cm long, with a close tubular sheath below the middle and another at the base. **Leaf** suberect to spreading, coriaceous, narrowly ovate, acute, 3.5-6 cm long, 1-1.9 cm wide, the base rounded, shallowly cordate, sessile. **Inflorescence** a successive, single, usually non-resupinate flower, subtended by a spathe 5-7 mm long; peduncles 1-2 mm long; floral bracts tubular, 3-6 mm long; pedicels 4-10 mm long; ovary 1.5-3 mm long; **sepals** translucent greenish, yellow or greenish yellow suffused with purple, glabrous, the dorsal sepal elliptical, subacute to obtuse, 3.5-4.5 mm long, 2-3 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal 3-4 mm long, 2.5-3 mm wide expanded, 4-veined; **petals** yellow to rose, narrowly oblong-triangular, acute, 2-2.5 mm long, 0.5-0.75 mm wide, 1-veined; **lip** yellow to purple, broadly ovate to broadly oblong, 1.5-2.25 mm long, 1.5-2 mm wide, the apex broadly obtuse to rounded, the disc concave centrally above a transverse thickening at the base, the base subtruncate, shallowly concave on a short claw, hinged to the column-foot; **column** stout, terete, about 1 mm long and wide, the foot thick, the anther, rostellum and stigma apical.

VENEZUELA: **Dist. Fed.**: Silla near Caracas, collected Mar. 1840, cultivated Aug. 1840, *E. Otto s.n.* (Holotype: K), C. Luer illustr. 16361; "Caracas," cultivated K.W. John in Andernach, Apr. 1904 (holotype of *P. nephrocardia* destroyed at B: lectotype here designated: AMES 23163, illustr. of type); Fila Maestra, northwest of Colonia Tovar, alt. 2000-2200 m, 12 July 1963, *J.A. Steyermark 91561* (AMES, VEN); Guatopo near Caracas, cultivated at El Hatillo, 24 July 1982, *G.C.K. Dunstervalle 193* (SEL), C. Luer illustr. 8089. **Carabobo**: alt. 2,500 ft., May 1946, *L. Schlim 628* (holotype of *P. ionantha*: W). **Aragua**: Colonia Tovar, *A. Fendler 1480* (AMES, BR, K), C. Luer illustr. 19130; Colonia Tovar, *J.W.K. Moritz 857* (W); without collection data, *A. Fendler 2763* (W); Parqué Nacional Henry Pittier, 20-25

Oct. 1961, alt. 1500-2200 m, *J.A. Steyermark 89768, 89769, 89791, 89842, 89926* (AMES, VEN). Without collection data, cultivated at Hatillo, 24 July 1982, *G.C.K. Dunsterville 1024* (SEL), C. Luer illustr. 8090. **Falcon**: Sierra de San Luis, between Curimagua and San Luis, alt. 1300-1400 m, 18 July, 1967, *J.A. Steyermark 99095* (AMES, M, VEN). **Lara**: Dist. Jiménez, Montaña Oscura, southeast of Sanare, alt. 1630 m, 8 Aug. 1970, *J.A. Steyermark, F. Delascio, G.C.K. & E. Dunsterville 103592* (AMES, VEN). **Yaracuy**: San Filipe, north of Salom, alt. 1200 m, 7 Dec. 1980, *J.A. Steyermark 123798, 123826* (SEL, VEN). **Portuguesa**: north of Chabasquén, alt. 1300-1500 m, 15 Mar. 1982, *R. Liesner et al.* (MO).

COLOMBIA: **Antioquia**: Parqué Nacionál Natural "Las Orquídeas," Río Venados, alt. 785-880 m, 5 June 1988, *A. Cogollo & J.G. Ramírez 3232* (JAUM, MO). **Chocó**: San José del Palmar, alt. 630-730 m, 7 Mar. 1980, *E. Forero et al. 6820* (COL, MO).

ECUADOR: **Pastaza**: between Baños and Puyo, 8 Oct. 1961, *C.H. Dodson & L.B. Thien 930* (SEL); below Baños, alt. 1800 m, 13 Mar. 1975, *C. Luer & R. Kent 202* (SEL); north of Puyo, alt. 750 m, 21 Mar. 1976, *C. Luer, J. Luer & P. Taylor 929* (SEL). **Tungurahua**: west of Río Verde, alt. 1570 m, 27 July 1971, *B. MacBryde 662* (SEL). **Zamora-Chinchipe**: at the pass between Loja and Zamora, cultivated in Chamblee, GA, 19 Nov. 1974, *F L Stevenson 111974-15* (SEL), C. Luer illustr. 163A.

This small species is frequent and morphologically variable in the coastal range of Venezuela, where it has acquired several names, and less frequent in Colombia and the Oriente of Ecuador. Both vegetatively and florally, the plants from Ecuador are larger, but without other remarkably distinguishing features. Treated here as a "species complex," it probably includes several taxa with intermediate variations.

Pleurothallis tridentata is characterized by slender ramicauls and ovate to narrowly ovate, acute leaves that are shallowly cordate at the base, and a small, usually but not always non-resupinate flower. The middle sepal and synsepal are obtuse, and the petals are narrow and acute. The lip is broadly ovoid, and concave both above and below a transverse thickening below the middle. Sometimes a glenion is visible on the transverse thickening. Variations in the width of the lip depend on how much pressure is used to expand it for measuring.

Acronia troglodytes (Luer) Luer, comb. nov.

Ety.: From the Greek *troglodytes*, "a cave dweller," in allusion to the cryptic position of the flower between the basal lobes of the leaf.

Bas.: *Pleurothallis troglodytes* Luer, Selbyana 7: 125, 1982.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a long, tubular sheath below the middle and 2-3 shorter sheaths at the base, 11-32 cm long. **Leaf** acutely deflexed, coriaceous, cordate-ovate, 8-14 cm long, 3.5-6 cm wide, the apex acute, the base sessile, deeply cordate, the lobes up to 2 cm deep and infolded with the margins meeting over the inflorescence. **Inflorescence** a fascicle of solitary, successive, non-resupinate flowers borne from an erect, conduplicate spathe, 8-10 mm long, at the base of the leaf; peduncles 2-3 mm long, confined within the spathe; floral bracts thin, 5-6 mm long; pedicels 8-10 mm long; ovary 4 mm long; **sepals** yellow-green, suffused with red, cellular-glandular, long-pubescent toward the margins, the middle sepal transversely ovate, obtuse, 11 mm long, 12 mm wide, 7-veined, the lateral sepals connate into a broadly obovate, rounded synsepal, 12 mm long, 11 mm wide, 6-veined, with the sides recurved; **petals** colored as the sepals, pubescent near the margins, widely expanded, obovate-spathulate, obtuse, 8 mm long, 5 mm wide, 3-veined; **lip** deep red-purple, thick, transversely subtriangular-trilobed, 2.5 mm long, 5 mm wide, the apex transversely obtuse, the lateral angles acute, above the middle, the disc shallowly channeled medially above the middle, with a tall, subconical callus at the base, the base deflexed, flattened on the end, hinged to the column-foot; **column** stout, 2 mm long, 2 mm broad, the anther and bilobed stigma apical, the foot 2 mm long with red hairs.

ECUADOR: **Pichincha**: epiphytic in forest above Puerto Quito, alt. 900 m, 13 Mar. 1982, collected by *C. Luer, A. Hirtz & S. Dalström 7396* (Holotype: SEL). **Esmeraldas**: northwest of Cristal, 10 Km northwest of Lita, alt. 1450 m, 13 Mar. 1991, *C.H. Dodson, T. Neudecker & H. Volles 18605* (MO). **Imbabura**: road southeast of Lita, alt. 1200 m, 11 Jan. 1992, *C. Luer, J. Luer, A. Hirtz 15551* (MO).

This species, apparently endemic at low altitudes in northwestern Ecuador, is closely related to the Panamanian *Acronia peculiaris*. In spite of the great degree of variations to be expected within species of this section, the differences seem sufficient to maintain *A. troglodytes* specifically distinct. It is distinguished from *A. peculiaris* by the broader, non-spotted leaves; transversely ovate sepals; and a lip with the lateral angles below the middle and a tall callus at the base.

Acronia tuberculosa (Luer & Hirtz) Luer, comb. nov.

Ety.: From the Latin *tuberculosis*, "tuberculate," referring to the verrucose lip.

Bas.: *Pleurothallis tuberculosa* Luer & Hirtz, Lindleyana 11: 191, 1996.

Plant medium to large in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 20-30 cm long, with a close, tubular sheath on the lower fourth and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly obovate, acute, 9-13 cm long, 1.4-1.7 cm wide, the base sessile, shallowly cordate with the sides revolute. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe ca. 10 mm long; peduncles 2-3 mm long concealed within the spathe; floral bracts tubular, 5 mm long; pedicels 6-7 mm long; ovary 4 mm long; **sepals** purple, sparsely short-pubescent within, the dorsal sepal elliptical, obtuse, 9 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 7.5 mm long, 4.25 mm wide, 4-(6-)veined; **petals** purple, narrowly oblong, slightly constricted near the middle, acute, minutely denticulate, 7.5 mm long, 1 mm wide, to 1.75 mm wide at the base, 1-veined; **lip** dark purple-black, thick, ovoid, subacute, 3.75 mm long, 2.25 mm wide, 1.5 mm thick, the surface convex, diffusely verrucose, the base truncate with a broad, convex, smooth area beneath the column without a glenion, minutely pubescent on the flattened, deflexed end, hinged to the column-foot; **column** stout, terete, 2 mm long, 2 mm wide, the foot thick, pubescent, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Zamora-Chinchipe**: epiphytic in forest south of the pass south of Jimbura, alt. 3050 m, 21 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 12005* (Holotype: MO).

Vegetatively, this species from a high altitude in southernmost Ecuador is distinct with the narrowly obovate leaves borne by long, slender ramicauls. The base of the leaf is shallowly cordate with the sides of the leaf recurved in the lower third to accentuate the obovate appearance of the leaf. The purple flowers are characterized by an obtuse, three-veined dorsal sepal; narrow, acute, denticulate petals as long as the synsepal; and a thick, purple-black, ovoid lip with the convex surface minutely verrucose.

Acronia tyria (Luer & Hirtz) Luer, comb. nov.

Ety.: From *tyrius*, "Tyrian purple," referring to the deep purple of the flowers.

Bas.: *Pleurothallis tyria* Luer & Hirtz, Lindleyana 11: 192, 1996.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-20 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 4.5-10 cm long, 1-1.7 cm wide, the base sessile, rounded, shallowly cordate. **Inflorescence** a successive, single flower, borne from the base of the leaf with a narrow spathe 8-10 mm long; peduncles 2-3 mm long within spathe; floral bracts tubular, 5-6 mm long; pedicels 8 mm long; ovary 5 mm long; **sepals** deep purple, glabrous, the dorsal sepal elliptical, obtuse, 11-12 mm long, 6-8 mm wide, 5-veined, the lateral sepals connate into an ovate, subacute to obtuse synsepal, 9.5-11.5 mm long, 7-8 mm wide, 9-veined; **petals** deep purple, decurved, oblong, acute, minutely denticulate, 4.5-6.5 mm long, 1 mm wide, 1-veined; **lip** deep purple, oblong, obtuse, cellular-glandular, 3-4.5 mm long, 2.4-3 mm wide, the disc slightly convex, with a small glenion at the base, the base subtruncate and deflexed into a thick claw, hinged to the column-foot; **column** stout, semiterete, 1 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

ECUADOR: **Morona-Santiago**: epiphytic in forest between Macas and Guamote, alt. 1900 m, 6 Feb. 1987, *C. Luer, J. Luer & A. Hirtz 12708* (Holotype: MO). **Imbabura**: Reserva Biológica Los Cedros, José's Ridge, alt. 1800-1900 m, 27Jan. 1993, *S. Dalström 1804* (MO), C. Luer illustr. 16683.

This species occurs uncommonly at relatively low altitudes of both declivities of the Andes of eastern and western Ecuador. It is similar to other species characterized by a narrowly ovate leaf rounded at the base. The flower is proportionately large and deep purple. The sepals are obtuse, the dorsal being five-veined; the petals are oblong and minutely denticulate; and the lip is small, subquadrate, and diffusely minutely verrucose. A well-formed glenion is present at the base that is deflexed into a thick claw.

Acronia undulata (Poepp. & Endl.) Luer, comb. nov.

Ety.: From the Latin *undulatus*, "undulate," referring to the margins of the dried leaf.

Bas.: *Pleurothallis undulata* Poepp. & Endl., Nov. Gen. Sp. 1: 48, 1836.

Syn.: *Humboldtia undulata* (Poepp. & Endl.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis juninensis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 76, 1921.

Ety.: Named for the Peruvian department of Junín where the species was collected.

Syn.: *Zosterophyllanthos undulatus* (Poepp. & Endl.) Szlach. & Marg., Polish Bot. J. 46(2): 121, 2001.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-18 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** spreading, horizontal, thickly coriaceous, cordate-ovate, acute, 2.5-7.5 cm long, 1.5-3 cm wide, the base sessile, deeply cordate. **Inflorescence** a fascicle of successive, single flowers, borne on top of the base of the leaf, subtended by a spathe 5-8 mm long; peduncles 1-2 mm long; floral bracts tubular, 5-8 mm long; pedicels 5-8 mm long; ovary 2-3 mm long; **sepals** glabrous, variously colored from yellow to purple, the dorsal sepal oblong-ovate, acute to subacute, 6-9 mm long, 2-4 mm wide, 3-veined, the lateral sepals connate into an ovate, acute to subacute synsepal, 6-9 mm long, 3-5 mm wide, 4-veined; **petals** narrowly linear, acute, entire to microscopically denticulate-erose, 3-5 mm long, 0.4-0.8 mm wide, 1-veined; **lip** ovate, subacute, 3-4 mm long, 1.5-2 mm wide, the surface flat to minimally convex or faintly sulcate, with the margins entire to microscopically denticulate-erose, the disc with a distinct, medium-sized glenion at the base, the base shallowly subcordate, flattened on the deflexed end with a short claw, hinged to the column-foot; **column** stout, terete, 1-1.5 mm long, 1.5 mm wide, the foot thick, obsolescent, with the anther, rostellum and stigma apical.

PERU: **Huánuco**: near Pampayaco and Cuchero, 1829, *Poeppig 1431* (Holotype: W; Isotype: BR), C. Luer illustr. 16988a. **Junín**: above Huacapistana on the way to Palca, alt. 1700-1900 m, *A. Weberbauer 1974* (holotype of *P. juninensis*: destroyed at B?); Chanchamayo Valley, alt. 1600 m, Oct. 1941, *C. Schuncke 1709* (AMES); San Ramón, alt. 900-1300 m, 8-12 June 1929, *E.P. Killip & A.C. Smith 24761, 24859* (AMES, US); above San Ramón, alt. 2200 m, 29 Jan. 1979, *C. Luer & J. Luer 3299* (SEL). **Loreto**: Pumayacu, between Balsapuerto and Moyobamba, alt. 600-1200 m, Aug.-Sept. 1933, *G. Klug 0.14* (AMES); **San Martin**: between Olmos and Moyabamba, alt. 980 m, 9 Dec. 1990, *D. Bennett, A. Bennett et al. 4815* (MO). **Pasco**: Oxapampa, cultivated by G. Furniss, Dec. 1992, *C. Luer 16553* (MO).

The relatively small, horizontal leaves of this species are thickly coriaceous, rigid, cordate and acute. Because of the thick texture, the margins sometimes appear minutely undulate after being pressed and dried as herbarium specimens. The flowers are relatively small and somewhat variable in proportions of length and width of the dorsal sepal and synsepal, each usually between six and nine millimeters long. The dorsal sepal is oblong to ovate, acute or subacute, and always three-veined. On top of the base of the leaf the flowers are borne singly and successively in a fascicle, or a few may be borne simultaneously, by short pedicels. The colors of the floral parts vary in combinations of yellow, orange, red, brown, and purple.

The slender, linear, single-veined petals are more or less straight as they project laterally from the sides of the flower. They vary somewhat in length, but are always less than one millimeter wide, most often about a half millimeter wide. The margins vary from entire to microscopically erose which is invisible to the naked eye. The lip is ovate, most often subacute, thin and essentially flat, usually between three and four millimeters long. The base is shallowly cordate and flattened on the end to form a short, broad claw beneath the column. A well-defined glenion is present on the disc above the base below the rostellum. The remaining surface of the disc is faintly sulcate. The margins are often microscopically erose.

Acronia upanoensis (Luer & Hirtz) Luer, comb. nov.

Ety.: Named for Río Upano, near where the species was collected.

Bas.: *Pleurothallis upanoensis* Luer & Hirtz, Orquideologia 22: 275, 2003.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-4 cm long, with a close, tubular sheath below the middle and another at the base. **Leaf** suberect, coriaceous, narrowly ovate, acute, 2.5-4 cm long, 0.8-1.2 cm wide, the base round to cuneate, sessile. **Inflorescence** a single,

successive, red-purple flower; peduncles obscure within the 3 mm long spathe at the base of the leaf; floral bract 3.5 mm long; pedicel 6 mm long; ovary 2.5 mm long; flower parts red-purple, **sepals** glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, 6 mm long, 3 mm wide, 3-veined, the lateral sepals completely connate into an ovate synsepal, 5.5 mm long, 5 mm wide, 4-veined; **petals** straight, narrowly oblong, acute, 4-5.5 mm long, 1 mm wide, with the margins minutely erose; **lip** ovate, obtuse, 2.25 mm long, 1.75 mm wide, the disc shallowly concave centrally, the base concave with a glenion, hinged to the base of the column-foot; **column** stout, dorsally compressed, semiterete, 1 mm long, 1.5 mm wide, the anther and bilobed stigma apical.

ECUADOR: **Morona-Santiago**: Río Upano, north of Macas, alt. 1100 m, 14 Jan, 1989, *C. Luer, J. Luer, A. Hirtz, A. & P. Jesup 13913* (Holotype: MO). Collection data lost, *E. Asplund 20025* (S).

This little species, from the eastern slopes of the Andes of Ecuador, is characterized by narrowly ovate leaves that are rounded or cuneate at the base. It is similar to Central American *Acronia isthmica*, a larger and more robust species with a longer lip. The small flower of *A. upanoensis* is distinguished mostly by the expanded, straight petals that are as long as the synsepal, and twice as long as the lip.

Acronia valladolidensis (Luer) Luer, comb. nov.

Ety.: Named for the community of Valladolid near the locality where this species was discovered.
Bas.: *Pleurothallis valladolidensis* Luer, Phytologia, 54: 388, 1983.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, with a close, tubular sheath below the middle and 2-3 shorter sheaths at the base, 10-30 cm long. **Leaf** acutely deflexed, coriaceous, narrowly ovate, 10-15 cm long, 1.5-2 cm wide, more or less curved up above the middle to the acute apex, the base, sessile, deeply cordate. **Inflorescence** a fascicle of solitary, successive, rosy brown, resupinate flowers borne from a suberect, conduplicate spathe, 15-18 mm long, 6 mm broad, at the base of the leaf; peduncles 4-5 mm long, confined within the spathe; floral bracts 10 mm long; pedicels 8 mm long; ovary 7 mm long, minutely verrucose; **sepals** cellular-glandular, the dorsal sepal ovate, obtuse, 15 mm long, 11 mm wide, 7- to 9-veined, the lateral sepals connate into an ovate, obtuse synsepal, 15 mm long, 11 mm wide, 8-veined; **petals** colored as the sepals, more or less reflexed, cellular-glandular, ovate, acute, unguiculate, 11 mm long, 6 mm wide, 3-veined; **lip** yellow, suborbicular, concave, with the apex rounded, 7 mm long, 6.25 mm wide, the margins slightly irregular, verrucose within toward the base, the base unguiculate with a flattened callus beneath the column, firmly hinged on the end to the column-foot; **column** stout, 3 mm long, 3 mm wide, the anther and bilobed stigma apical, the foot rudimentary.

ECUADOR: **Zamora-Chinchipe**: epiphytic in cloud forest near the river above Valladolid, alt. ca. 2000 m, 21 Feb. 1982, *D. D'Alessandro 167* (Holotype: SEL), C. Luer illustr. 8080.

This species is known from only the original collection. It is characterized by the narrowly cordate leaves that curve up beyond the middle, as seen in several closely allied species; a comparatively large, resupinate, downward-facing flower with obtuse sepals and acute petals. Most distinguishing is the orbicular, concave lip, verrucose within toward the unguiculate, callous base.

Acronia variabilis (Luer) Luer, comb. nov.

Ety.: From the Latin *variabilis*, "variable," referring to the floral parts.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect to arching, 15-37 cm long, with a close, tubular sheath below the middle and 2 other sheaths at the base. **Leaf** erect to horizontal, coriaceous, narrowly ovate, acute, 9-18 cm long, 1-3.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a fascicle of successive, non-resupinate, single flowers, borne at the base of the leaf, from a reclining spathe 15-23 mm long; peduncles 3-5 mm long, confined within the spathe; floral bracts tubular, 5-13 mm long; pedicels 10-17 mm long; ovary 7-10 mm long; **sepals** glabrous, creamy white, yellow, brown or purple, the middle sepal ovate-triangular, subacute to obtuse, concave, 11-13 mm long, 6-7.5 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, obtuse, deeply concave synsepal, 9-11 mm long, 9-10 mm wide, 6-veined; **petals** thick, yellow or purple, reflexed, ovate, more or less obtusely angled below the middle, acute to narrowly obtuse at the apex, entire, 8.5-11 mm long, 2-3.5 mm wide, 1-veined; **lip** thick, ovoid-triangular, 3.5-5.5 mm long, 3.5-5 mm wide, the apex convex, obtuse to rounded, the disc convex, with a tall, erect, basal callus bearing the glenion, the base broadly subcordate, flattened on the end, hinged to the column-foot; **column** stout, terete, 1.5-2 mm long, 2-3 mm wide, the foot thick, 2 mm long, the anther, rostellum and stigma apical.

ECUADOR: **Imbabura**: above Apuela, alt. 2500 m, 8 Feb. 1979, *C. Luer, J. Luer, R. Escobar & A. Hirtz 3909* (Holotype: SEL); near Apuela, Selva Alegre, alt. 2900 m, Apr. 1986, *A. Hirtz 2880* (MO). **Carchi**: between Tulcán and Maldonado, alt. 2700 m, 18 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 5696* (AAU); above Maldonado, alt. 2700 m, Mar. 1992, *S. Dalström 1533* (MO); Bolívar, above La Paz, alt. 3100 m, 18 Feb. 1998, *C. Luer, J. Luer, A. Hirtz & J. del Hierro 18712* (MO). **Sucumbíos**: Santa Bárbara, Valley of Río Chongal, alt. 2400 m, 10 Feb. 1959, *G. Harling 4185* (S). **Napo**: east of Papallacta, alt. 2800 m, 28 Oct. 1971, *B. MacBryde 891* (?); cloud forest below Papallacta, alt. 2800 m, 28 Aug. 1978, *C. Luer, J. Luer & A. Andreetta 3432* (SEL). **Tungurahua**: vicinity of Patate, Hda. Leito, alt. 2800 m, 5 Aug. 1939, *E. Asplund 8089* (S, US); El Triunfo, around Río Muyo, alt. 3000 m, *X. Buitrón 458* (QCA, US).
COLOMBIA: **Nariño**: west side of Laguna La Cocha, alt. 2750 m, 23 July 1989, *C.H. Dodson & R. Escobar 18108* (MO).

This species is found on both sides of the Andes of northern and central Ecuador, and southernmost Colombia. It is characterized by an erect or more or less horizontal, narrowly ovate leaf. Although there is little variation of the morphology of the flowers, they often appear different with many colors, and position. Most distinctive is the tall callus bearing the glenion at the base of the broad, thick lip. *Acronia variabilis* is related to *A. ripleyi* of southern Ecuador, which is most easily distinguished by minutely serrated petals.

Acronia vinealis (Luer & R.Escobar) Luer, comb. nov.

Ety.: From the Latin *vinealis*, "pertaining to vines," referring to the habit of the species.

Bas.: *Pleurothallis vinealis* Luer & R.Escobar, Orquideología 16: 30, 1986.

Syn.: *Zosterophyllanthos vinealis* (Luer & R.Escobar) Szlach. & Marg., Polish Bot. J. 46(2): 121, 2001.

Plant large, vinelike, a meter or more long, epiphytic; roots slender. Ramicauls slender, prolific, climbing, 18-40 cm long, with a slender, tubular bract near the middle and 1-2 others at the base. **Leaf** spreading, coriaceous, ovate, acute, 3-9 cm long, 2-3.5 cm wide, the base cordate, sessile. Inflo-rescence a solitary, brown, bilabiate flower borne from a spathe 10-12 mm long at the base of the leaf; peduncle 3-5 mm long; floral bract 6-8 mm long; pedicel 10-12 mm long; ovary 5-6 mm long; dorsal sepal elliptical-ovate, acute, 11-14 mm long, 4.5-5.5 mm wide, 3-veined, the veins prominent externally; lateral sepals connate into an ovate, acute **synsepal**, 11-14 mm long, 4.5-5.5 mm wide; **petals** narrowly triangular, acute, minutely denticulate, 6-7 mm long, 1 mm wide; **lip** oblong, subacute, 5.5-6.5 mm long, 3 mm wide, denticulate, with a distinct glenion at the acutely reflexed base; **column** stout, 3 mm long, with a stout foot, the anther apical, the stigma bilobed, apical.

COLOMBIA: **Cundinamarca**: epiphytic in low shrubs near forests above Gutierrez, alt. 2700 m, 19 May 1984, *C. Luer, J. Luer & R. Escobar 10364* (Holotype: MO).
ECUADOR: **Azuay**: Pan American highway south of Cuenca, alt. 3250 m, 4 May 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjtnant & B. Øllgaard 6488* (AAU, SEL); forest beside Río Mazán, west of Cuenca, alt. 3150-3400 m, 17 Aug. 1987, *R. Valencia 165* (MO, QCA), C. Luer illustr. 20818.

Although the flowers of this species are unremarkable, i.e., very similar to many species of the section, the long, vinelike habit is unique. The long, prolific ramicauls twine and branch in shrubs fully exposed to the sun, wind, and rain, some plants attaining a length of several meters. The flowers are similar to those of *Acronia coriacardia*, but the petals are proportionately slightly longer.

Acronia volans (Luer & Hirtz) Luer, comb. nov.

Ety: From the Latin *volans*, "flying," referring to the up-curved, ascending leaves.

Bas.: *Pleurothallis volans* Luer & Hirtz, Lindleyana 11: 195, 1996.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 17-25 cm long, with a close, tubular sheath below the middle and 2-3 sheaths at the base. **Leaf** rigid, coriaceous, narrowly ovate, acute, 15-18 cm long, 2-2.5 cm wide, horizontal and ascending above the base, the base deeply cordate, sessile. **Inflorescence** a fascicle of solitary, successive flowers borne from an erect to suberect, conduplicate spathe 15-18 mm long, 5-7 mm broad, at the base of the leaf; peduncles 2-4 mm long, confined within the spathe with the floral bracts and peduncles; floral bract 6 mm long; pedicel 5 mm long; ovary thick, 3 mm long; **sepals** dull yellow-brown, cellular-glandular within, the dorsal sepal transversely ovate, obtuse to rounded, concave, 10 mm long, 12 mm wide, 5-veined, the

lateral sepals connate completely into a transversely ovate, obtuse to rounded, concave synsepal, 8-9 mm long, 10-11 mm wide, 6-(8-)veined; **petals** brown, glabrous, broadly obovate, obtuse, shortly apiculate, shortly unguiculate, 7 mm long, 6 mm wide, 3-veined; **lip** dull yellow, cordate-triangular, the apex and basal angles rounded, 3.75 mm long, 3.5 mm wide across the base, the basal lobes to either side of the column, the disc shallowly concave, shallowly cleft to the apex, the base subcordate with a short, thick claw, firmly hinged to the column-foot; **column** stout, 2 mm long, 3 mm broad, the anther and bilobed stigma apical, the foot rudimentary.

ECUADOR: **Morona-Santiago**: epiphytic in cloud forest, Cordillera del Condor, alt. 1500 m, 18 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11908* (Holotype: MO).

Although obviously related to *Acronia cardiostola* and its affinities, the leaves of this species are not acutely deflexed. Instead, the leaf-ramicaul angle is approximately 90° with that portion of the slender leaf distal to the ramicaul gradually and gracefully acending. The spathe stands erect at the base of the leaf between the non-incurved, basal lobes. The flower is basically similar to those of *A. cardiostola* and *A. lilijae*, but the sepals are concave and transversely ovate, and the broad petals are glabrous, obtuse, shortly apiculate and unguiculate.

Acronia zarumae (Luer & Hirtz) Luer, comb. nov.

Ety.: Named for the community of Zaruma, above which this species was discovered.
Bas.: *Pleurothallis zarumae* Luer & Hirtz, Lindleyana 11: 196, 1996.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-24 cm long, with a close, tubular sheath on the lower third and 2 other sheaths at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, acuminate, 10-13 cm long, 1.8-2.5 cm wide, the base sessile, rounded, subcordate. **Inflorescence** a fascicle of successive, single flowers, subtended by a spathe 12-15 mm long; peduncles 3-5 mm long, concealed within the sheath; floral bracts thin, tubular, 3-5 mm long; pedicels 20-25 mm long; ovary 4-5 mm long; flowers light tan; **sepals** microscopically pubescent or cellular glandular, the dorsal sepal narrowly ovate, acute, 20 mm long, 6.5 mm wide, 7-veined, the lateral sepals connate into a narrowly ovate lamina, 18 mm long, 7.5 mm wide, 8-veined; **petals** decurved, spread, oblong-subtriangular, acute, microscopically denticulate, cellular-glandular, 7.5 mm long, 1 mm wide, 1-veined; **lip** reclining, ovate, obtuse, 4 mm long, 3 mm wide, minutely papillose with the margins denticulate, the disc with a glenion above the base, the base subcordate, reflexed; **column** stout, 1.5 mm long, 2 mm wide, the foot obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **El Oro**: epiphytic in forest above Zaruma, alt. 1800 m, 23 Feb. 1986, *C. Luer, J. Luer, A. Hirtz et al. 12029* (Holotype: MO).

This species, known only from the above collection, appears most similar to *Acronia ruberrima*. Vegetatively, the two species are indistinguishable. Instead of much narrower, the narrowly ovate, seven-veined dorsal sepal is about as wide as the synsepal. Instead of broadly concave, the narrowly ovate synsepal is slightly convex with lighlty recurved sides. The papillose lip is ovate, obtuse, and longer than broad, and the conspicuous central callus seen in *A. ruberrima* is absent. *Acronia persimilis*, a superficially similar species, is found in the same locality. A shorter peduncle, a three-veined dorsal sepal, and a proportionately longer lip distinguish it.

EXCLUDED NAME

Pleurothallis curvifructa H.G.Jones, Bradea 1: 263, 1972.
GUYANA: southwestern Guyana, near Guyana-Brazil border, Jan. 1970, *H.G. Jones Misc. P/599* (Holotype in author's herbarium).
Known only from inconclusive description, but probably *Acronia phyllocardioides* with a bent fruit.

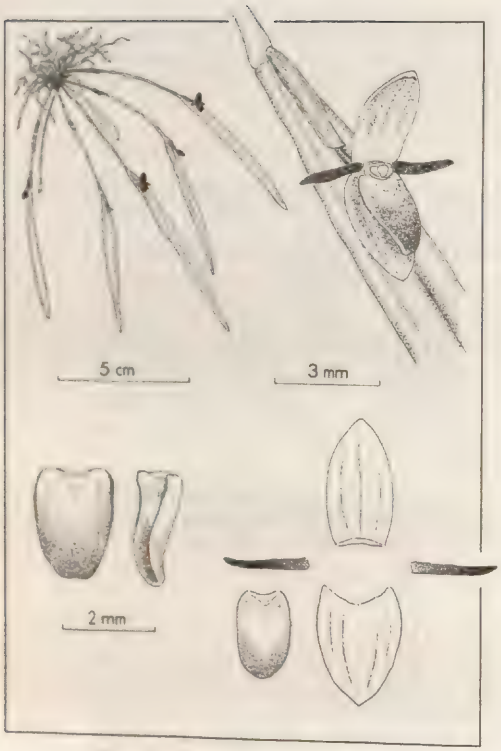


Fig. 1. Acronia acestrophylla

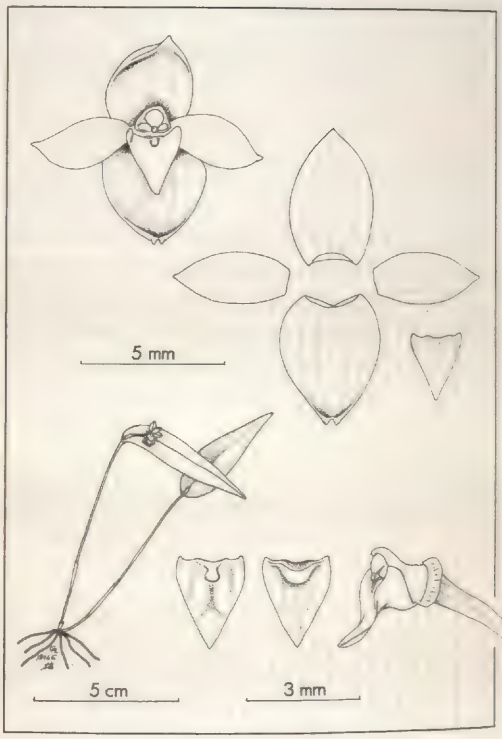


Fig. 2. Acronia acutilabia

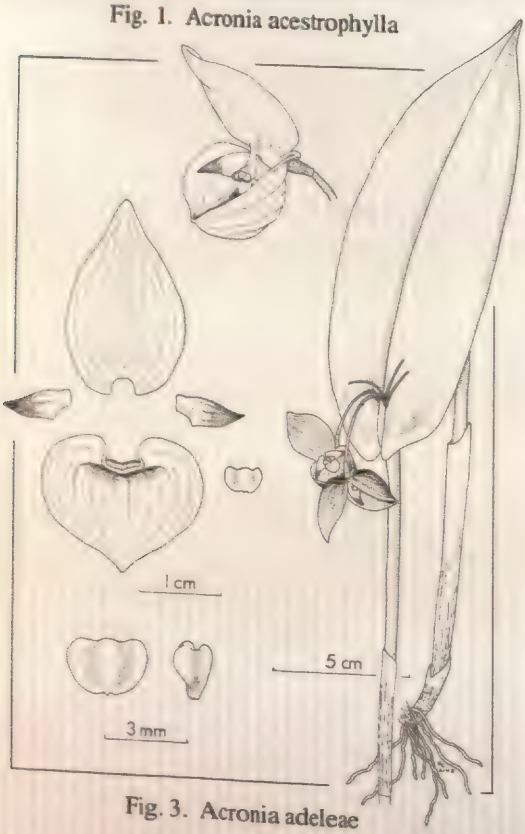


Fig. 3. Acronia adeleae

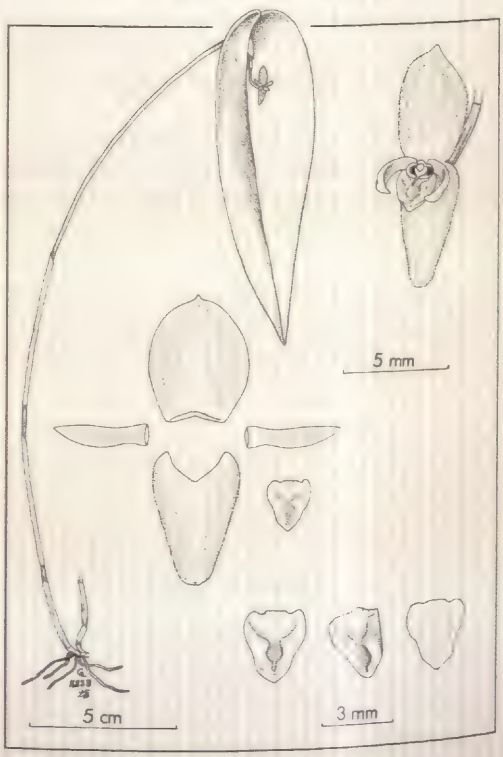


Fig. 4a. Acronia adelphe

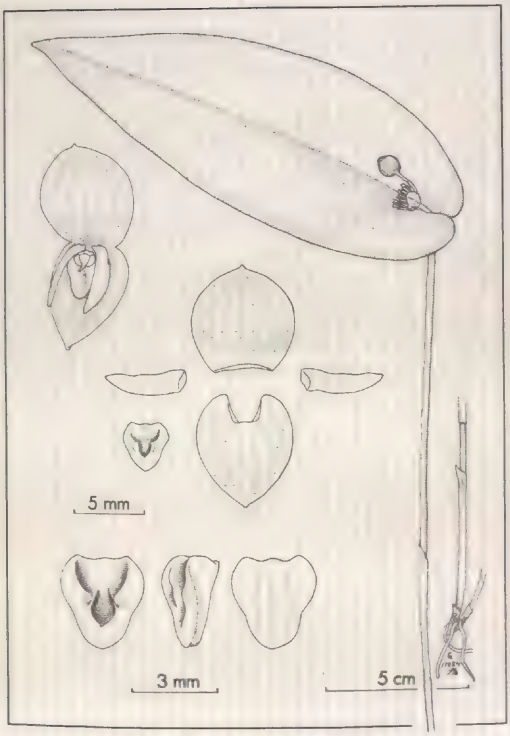


Fig. 4b. Acronia adelphe
(P. perforata)

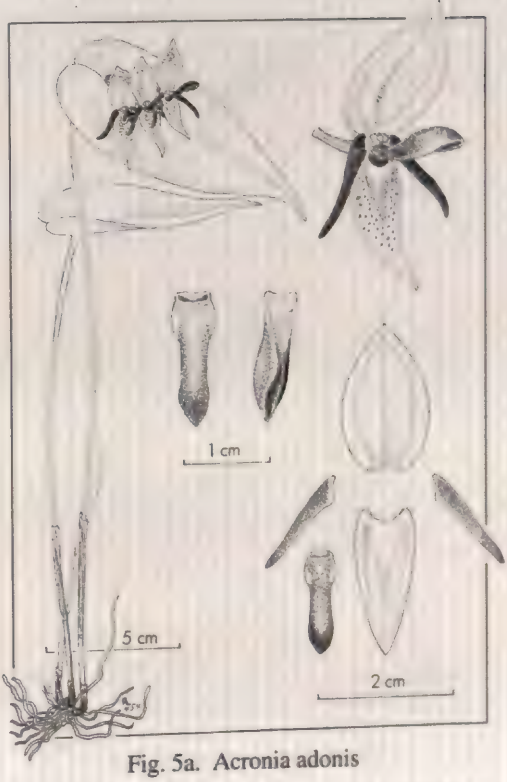


Fig. 5a. Acronia adonis

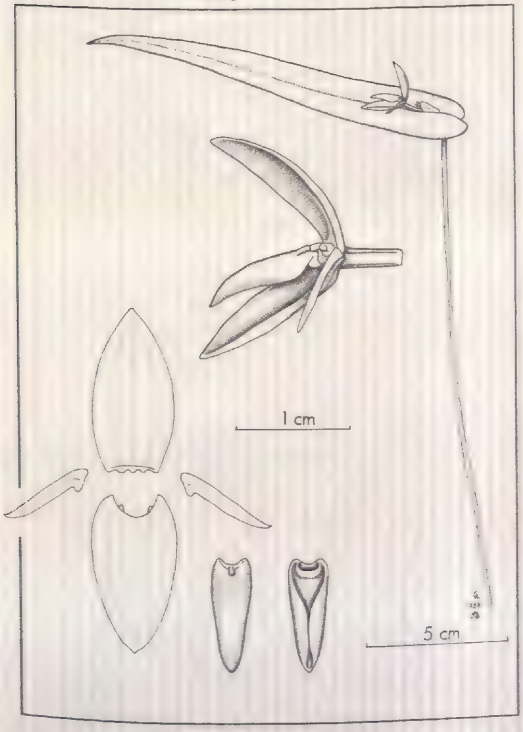


Fig. 5b. Acronia adonis

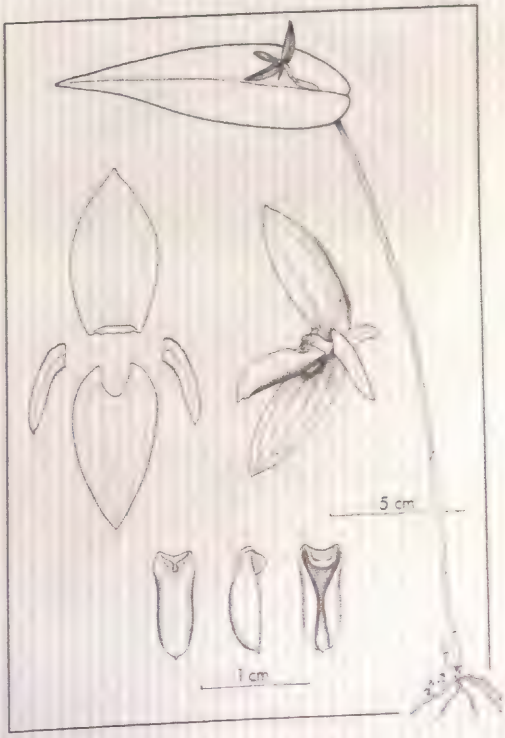


Fig. 5c. Acronia adonis

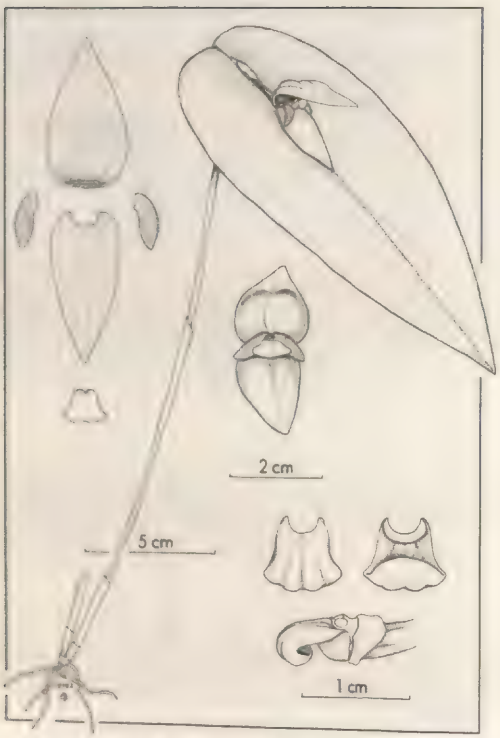


Fig. 6. Acronia aguirrei

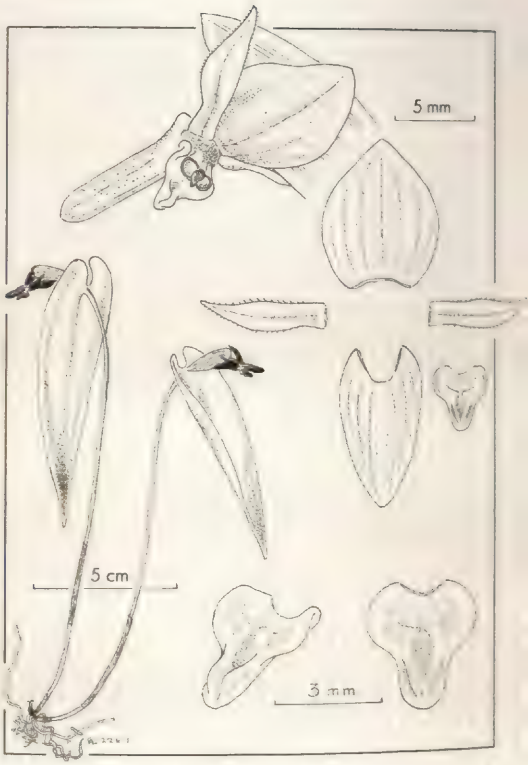


Fig. 7. Acronia alopex

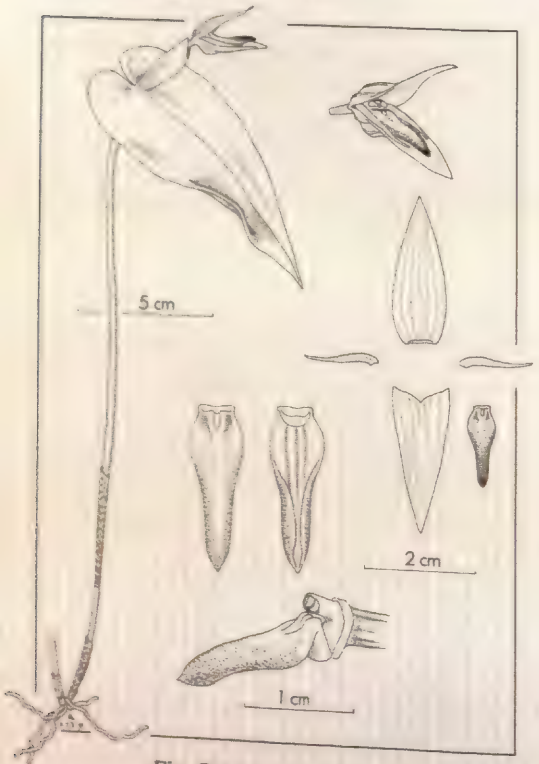


Fig. 8. Acronia altimonile

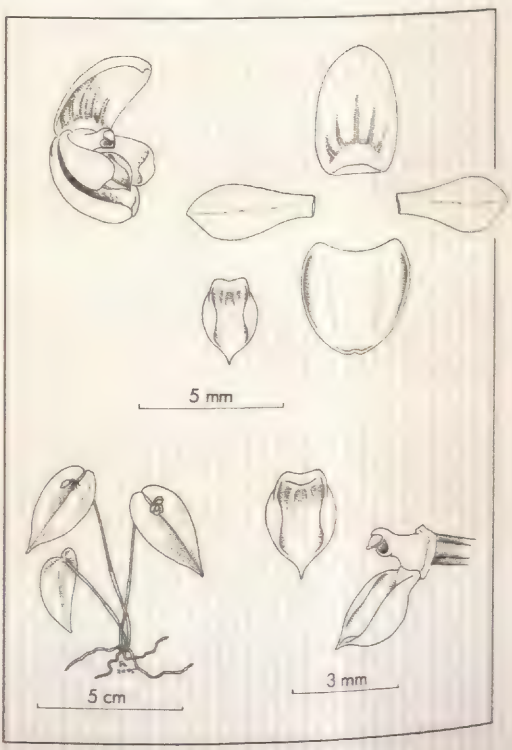


Fig. 9. Acronia ambyx

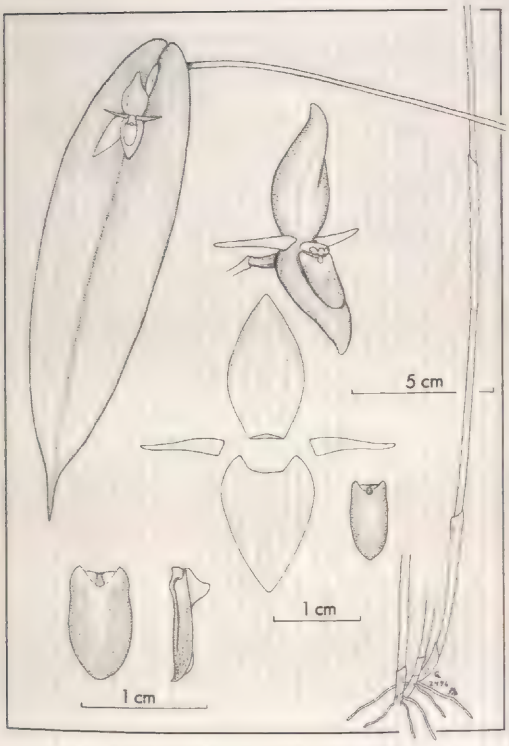


Fig. 10. Acronia andreettae

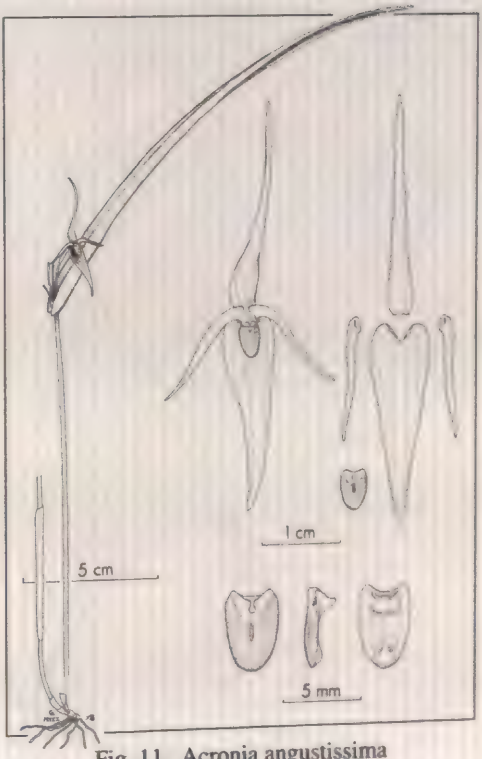


Fig. 11. Acronia angustissima

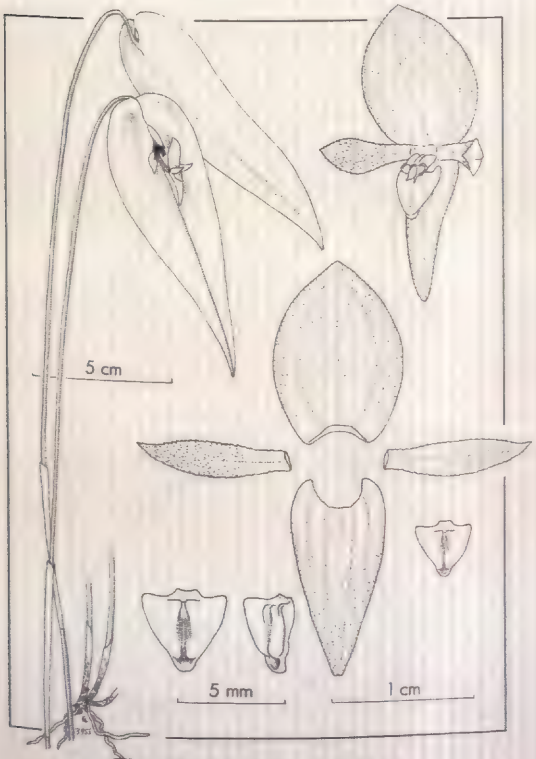


Fig. 12. Acronia apopsis

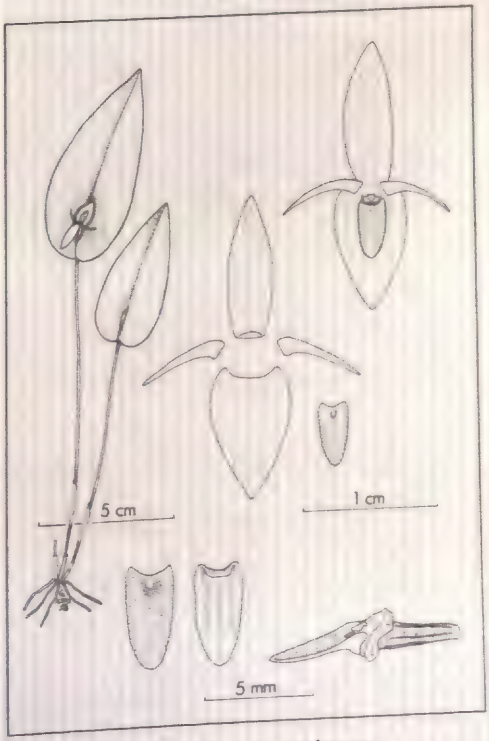


Fig. 13. Acronia applanata

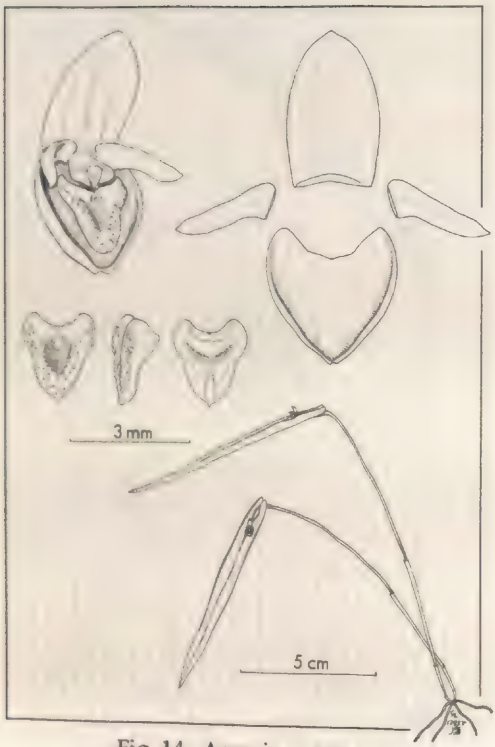


Fig. 14. Acronia arctata

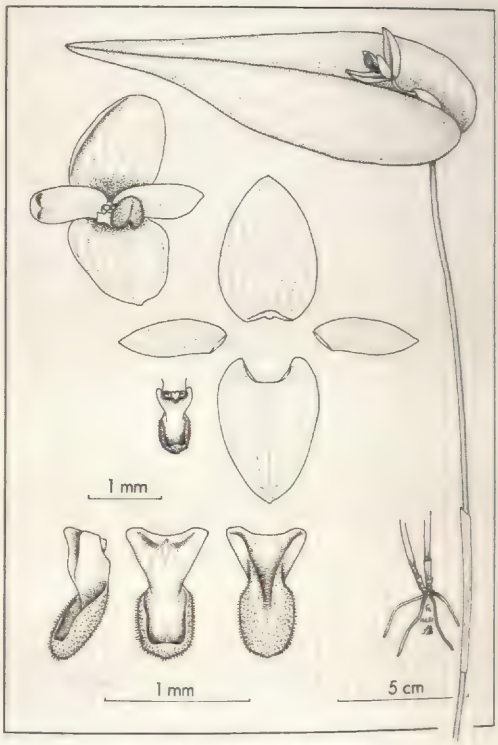


Fig. 15. Acronia ascera

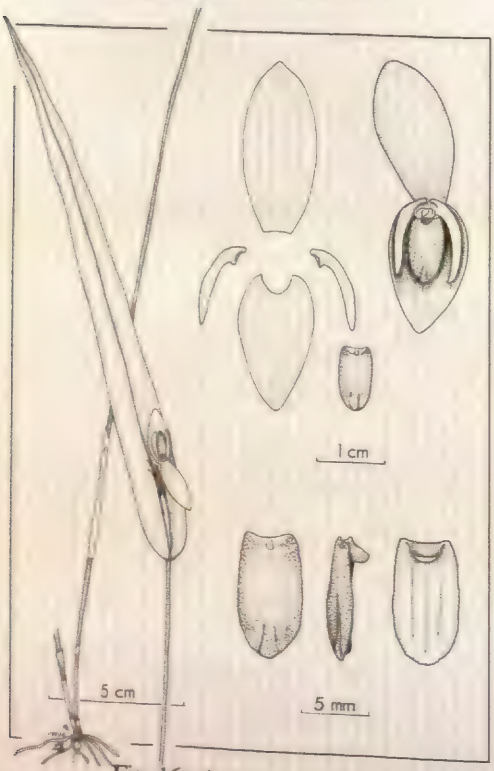


Fig. 16. Acronia asplundii

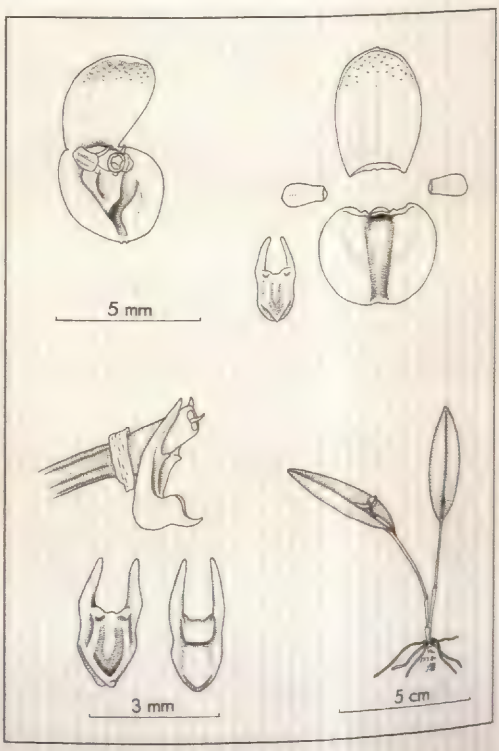


Fig. 17. Acronia aurita

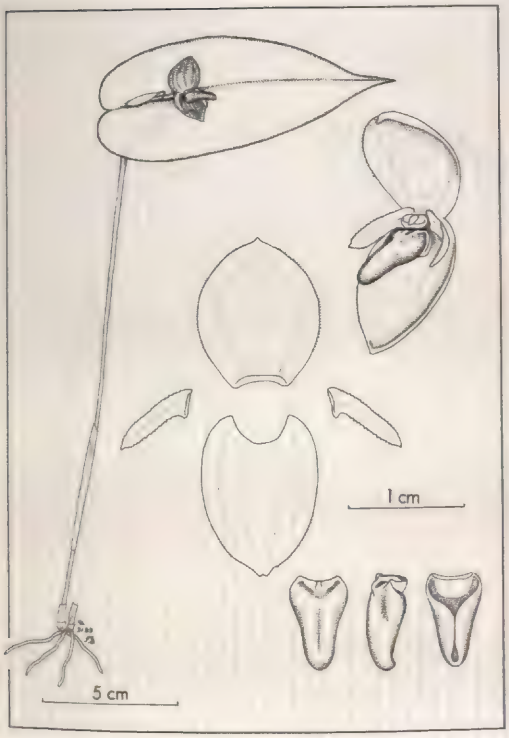


Fig. 18. Acronia baezensis

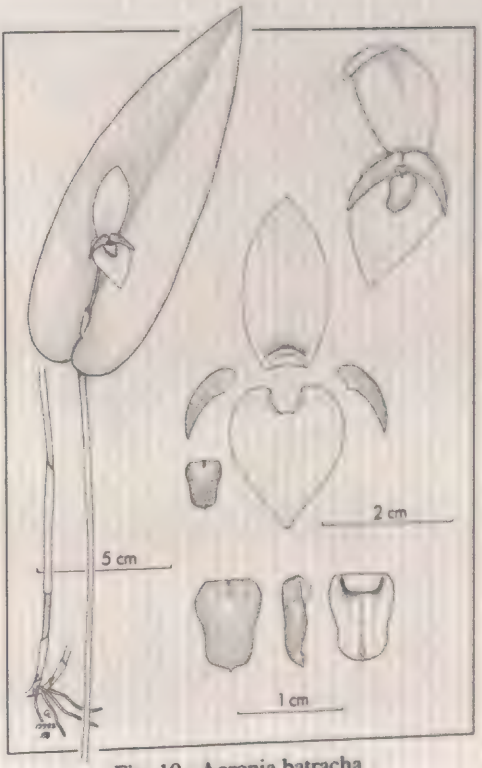


Fig. 19. Acronia batracha

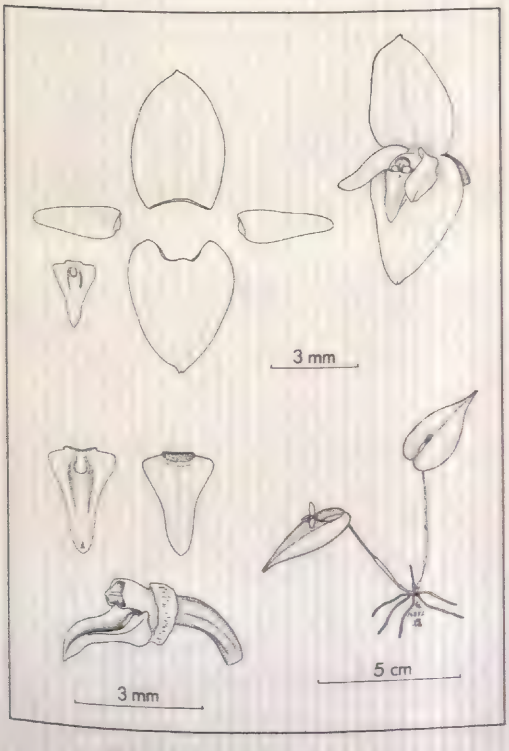


Fig. 20. Acronia baudoënsis

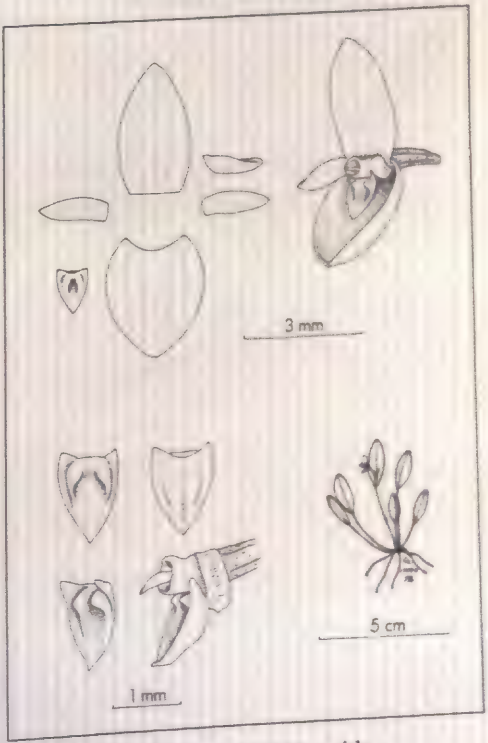


Fig. 21. Acronia bitumida

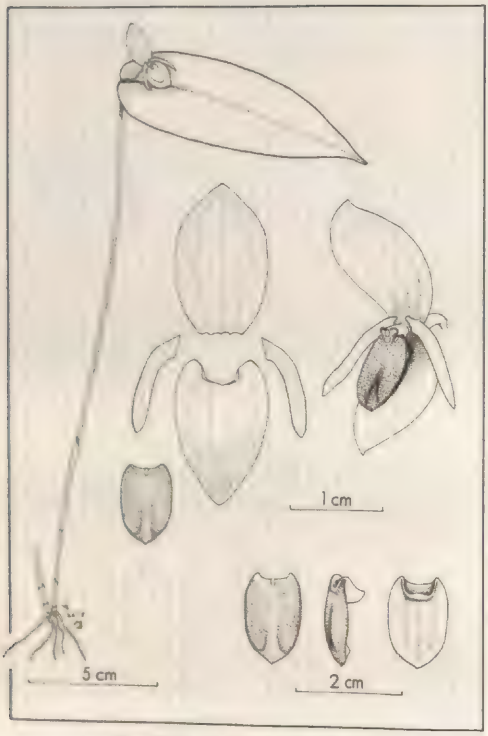


Fig. 22a. Acronia bivalvis
(bivalvis-P. sigsigensis)

Fig. 22b. Acronia bivalvis
(P. cardium-cardiantha)

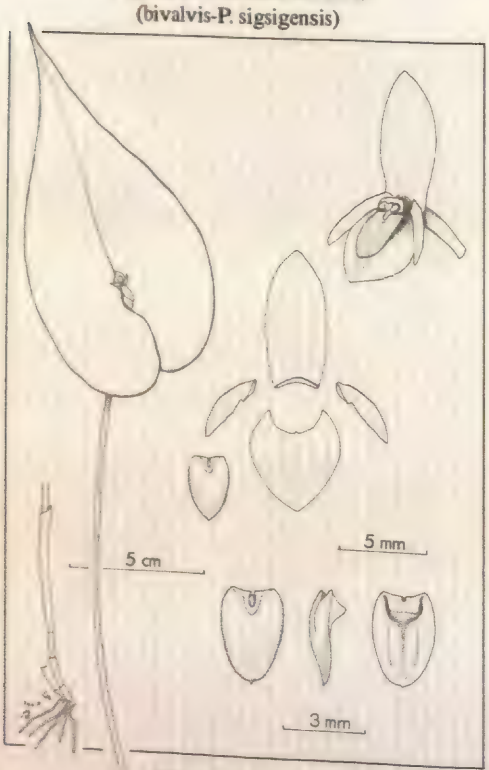


Fig. 22c. Acronia bivalvis
(P. cardium-cardiantha)

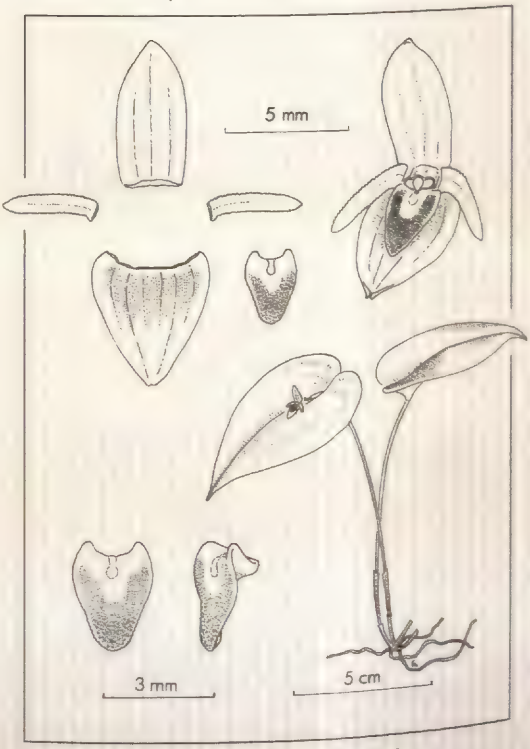


Fig. 22d. Acronia bivalvis
(P. antonensis)

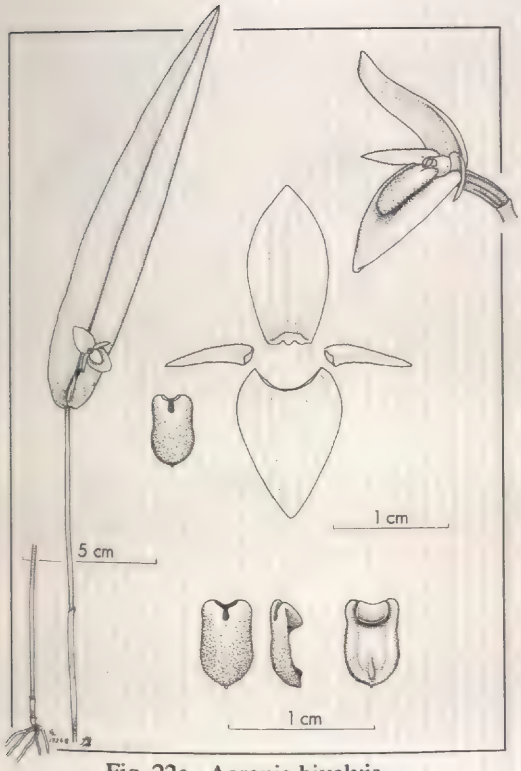


Fig. 22e. Acronia bivalvis
(P. angusta-harlingii)

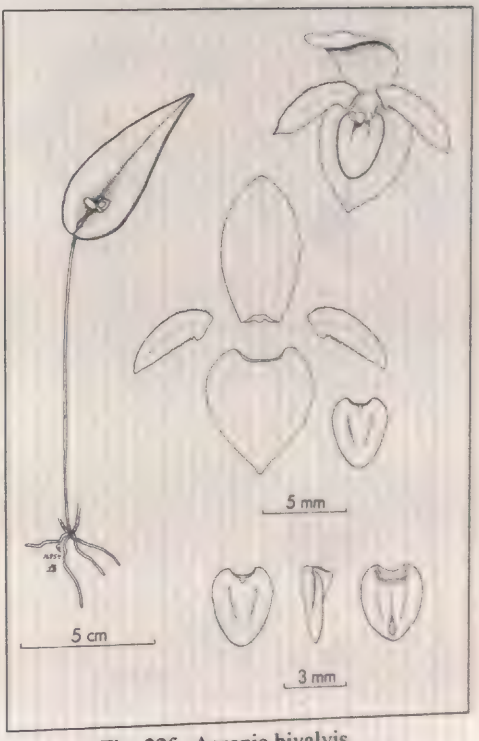


Fig. 22f. Acronia bivalvis
(P. stenocardia-archidiaconi)

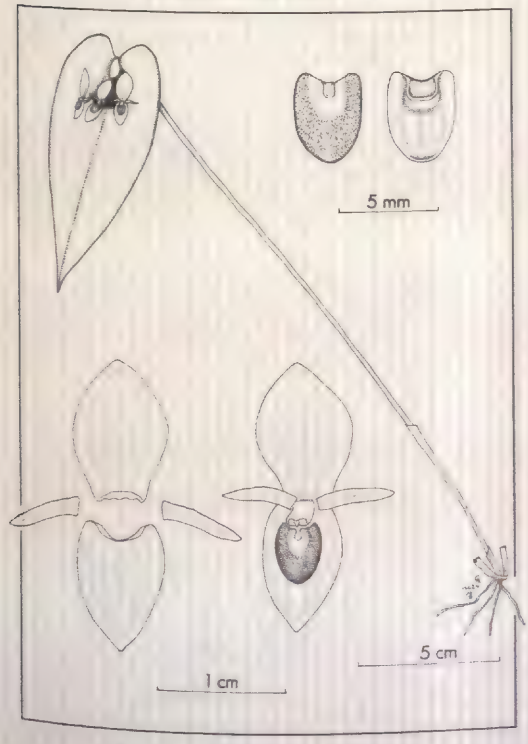


Fig. 22g. Acronia bivalvis
(intermediate)

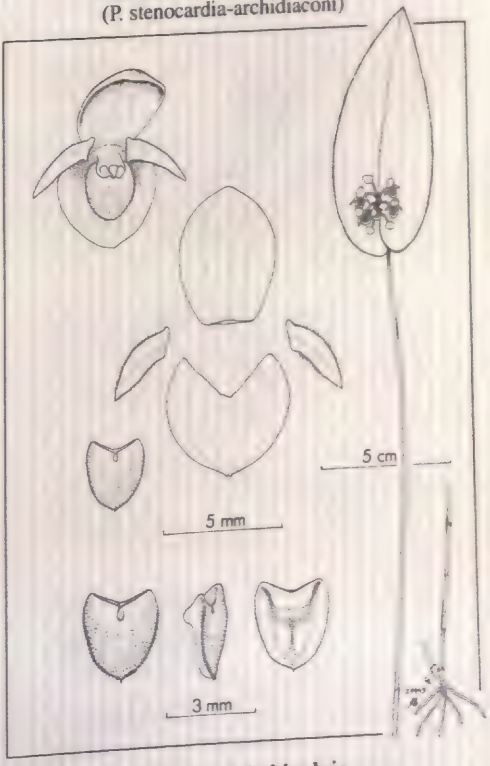


Fig. 22h. Acronia bivalvis
(A. cordata-P. lilianiae)

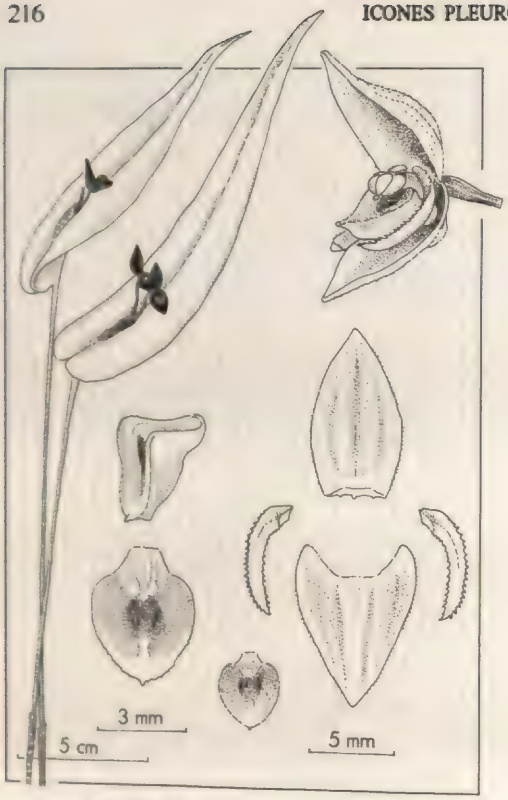


Fig. 23. Acronia blepharopetala

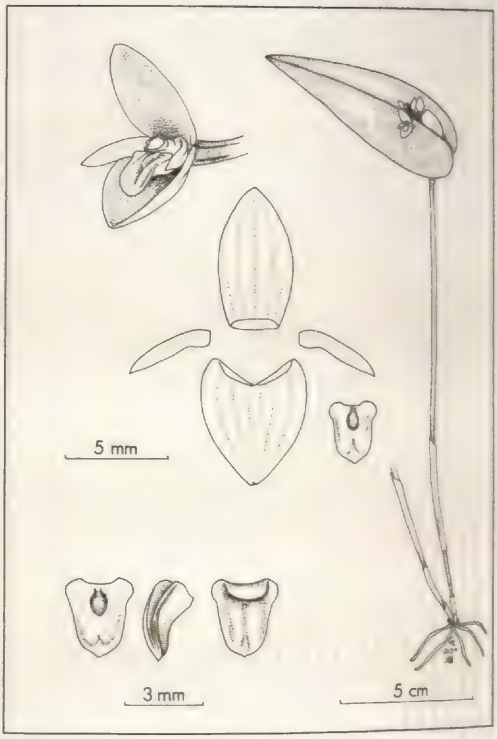


Fig. 24. Acronia bothros

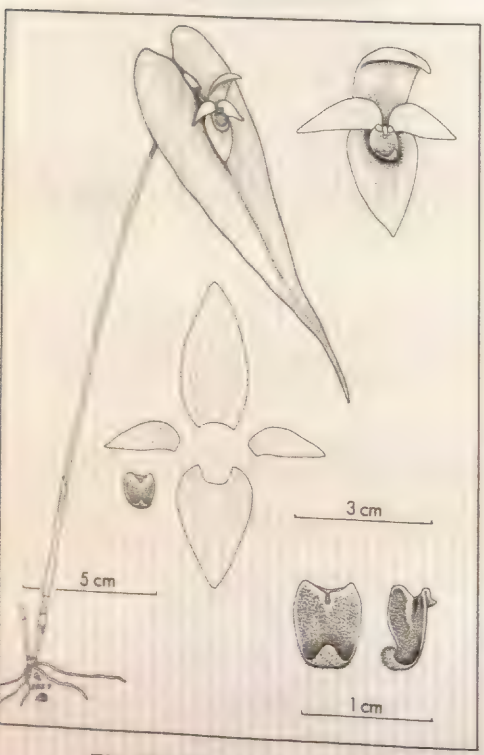


Fig. 25. Acronia bovilingua

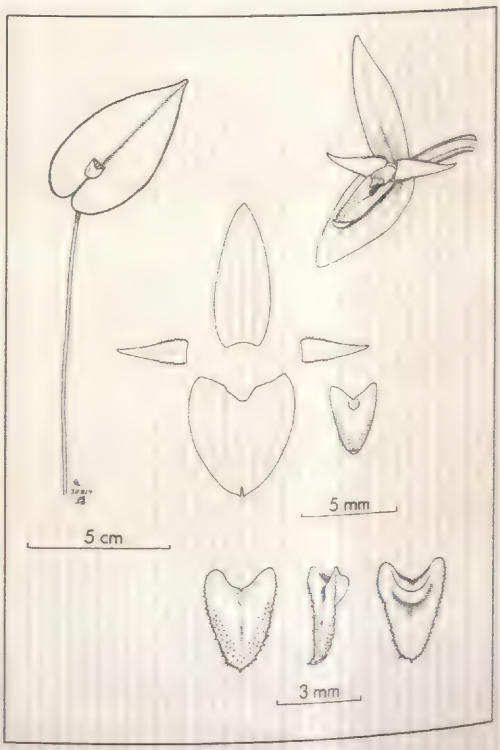


Fig. 26. Acronia braidiana

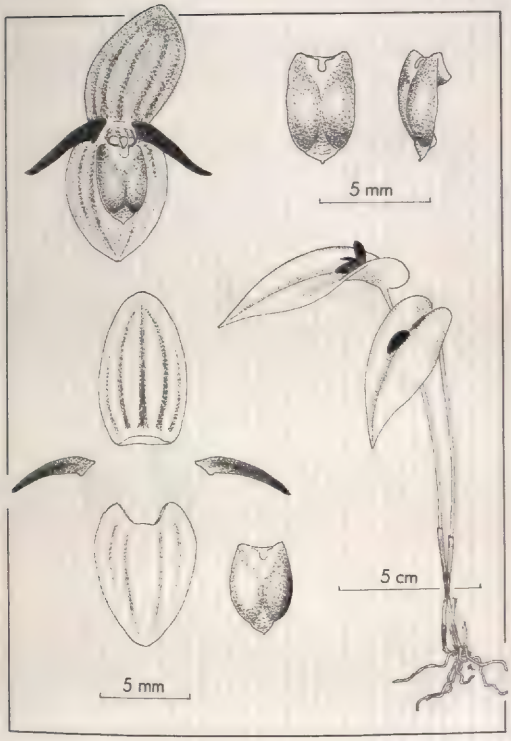


Fig. 27. Acronia bucculenta

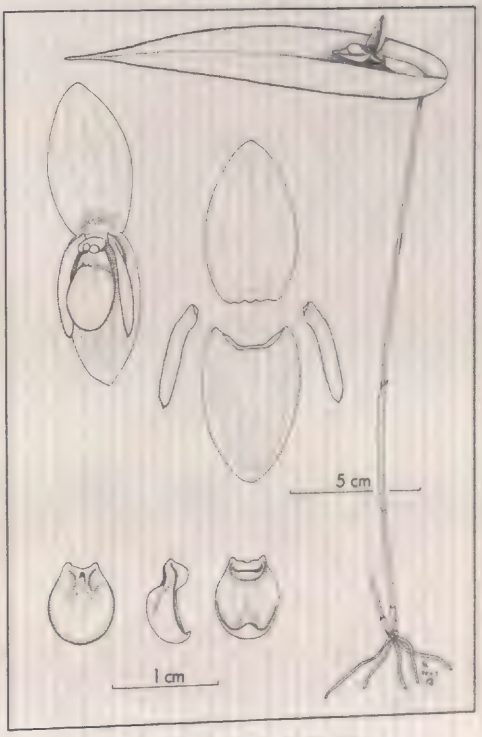


Fig. 28. Acronia bulbosa

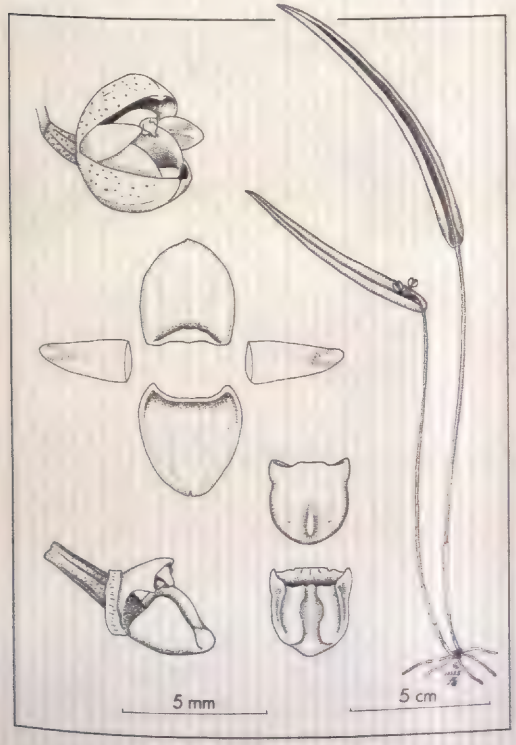


Fig. 29. Acronia calamifolia

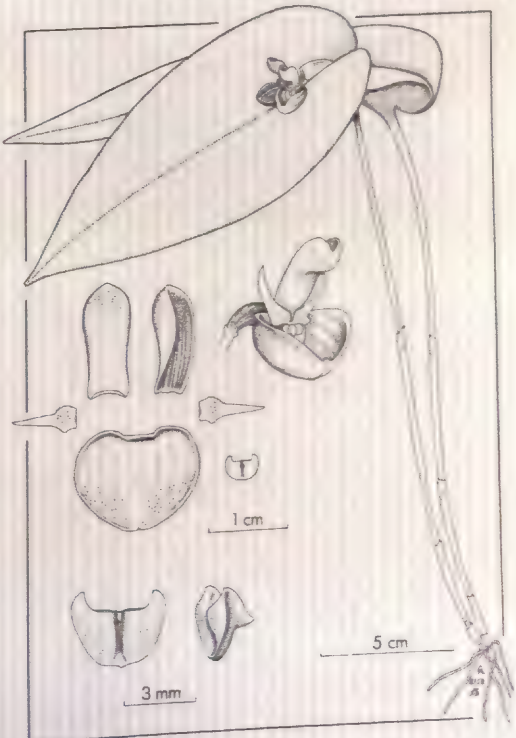


Fig. 30. Acronia calceolaris

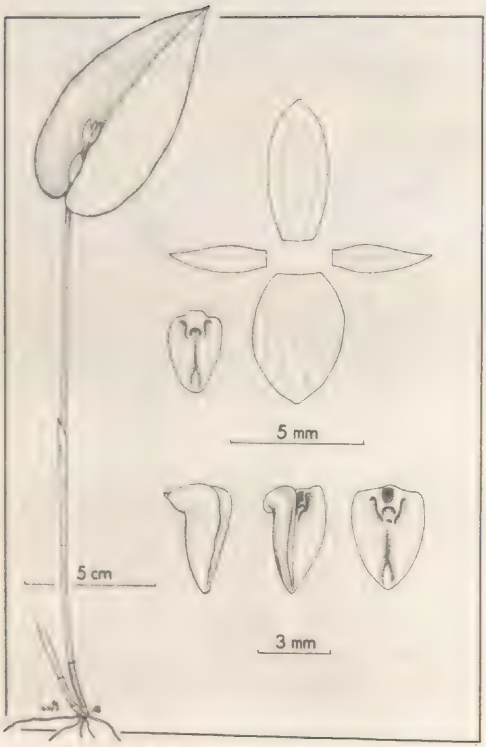


Fig. 31. Acronia callifera

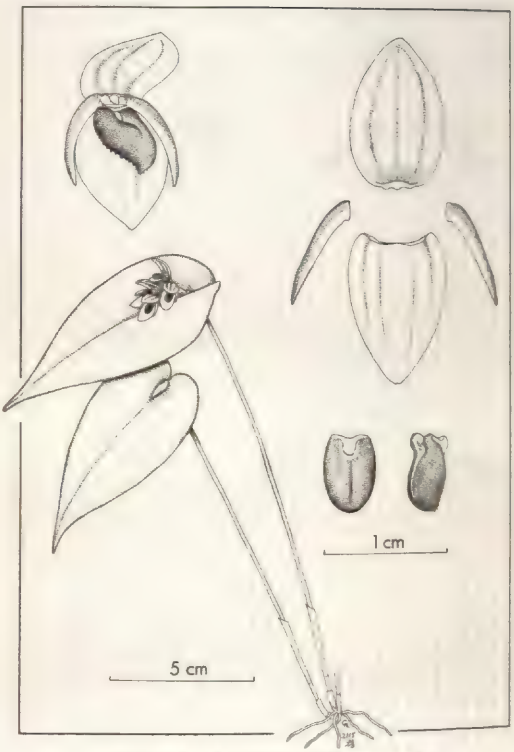


Fig. 32. Acronia calogramma

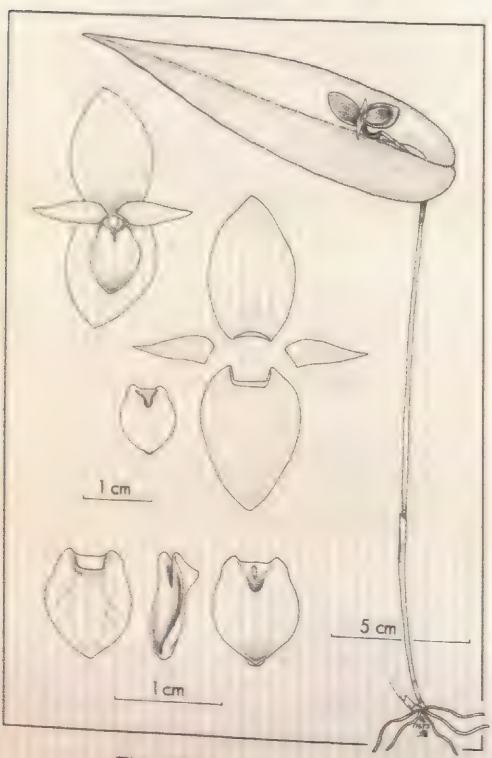


Fig. 33. Acronia calolalax

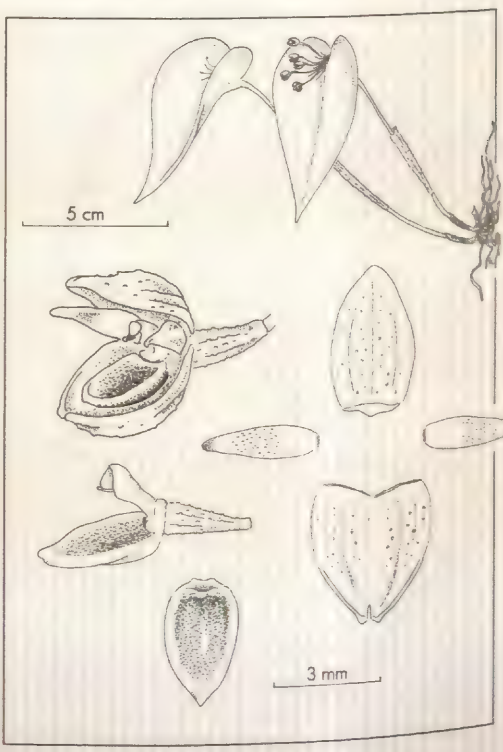


Fig. 34. Acronia canaligera

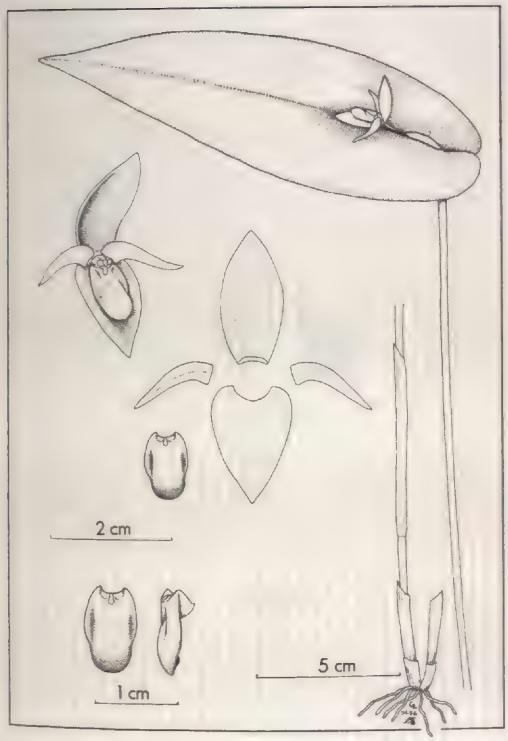


Fig. 35. Acronia cassidentis

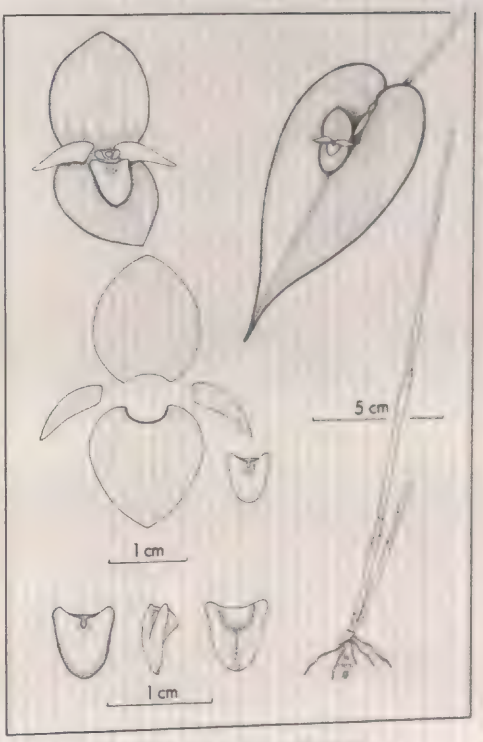


Fig. 36. Acronia cardiochila

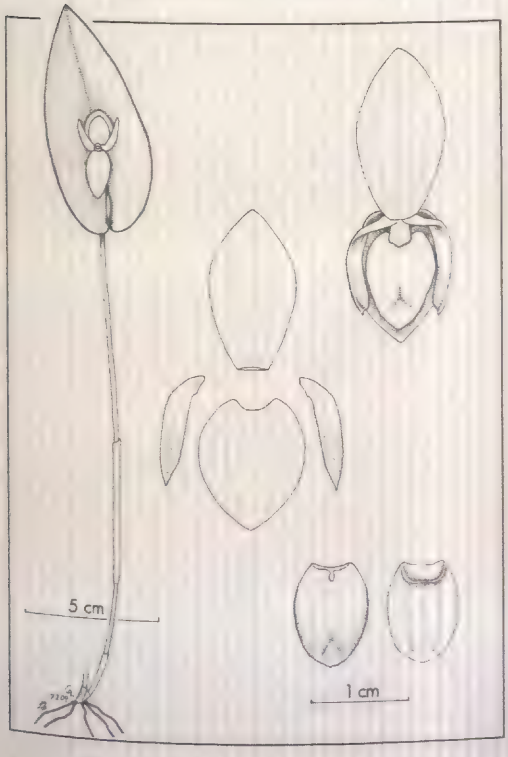


Fig. 37. Acronia cardiophylax

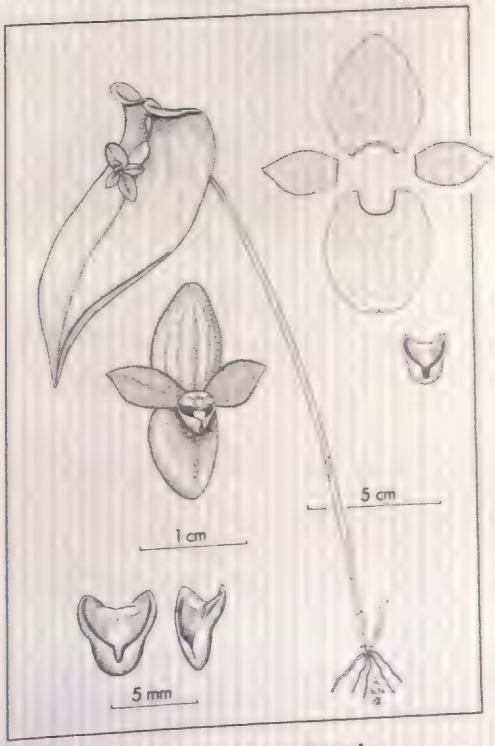


Fig. 38a. Acronia cardiostola

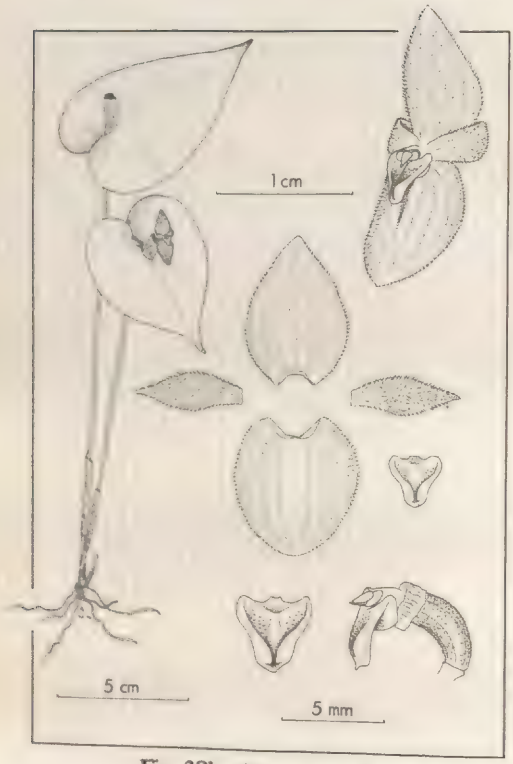


Fig. 38b. Acronia cardiostola
(P. lanigera)

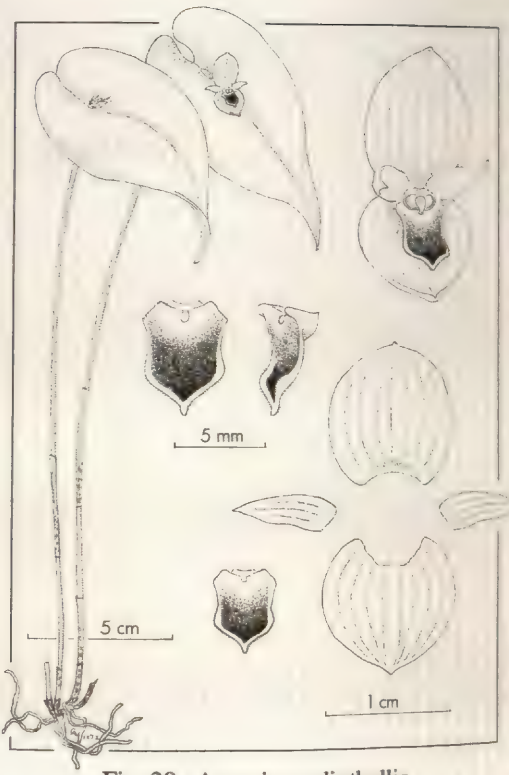


Fig. 39. Acronia cardiothallis

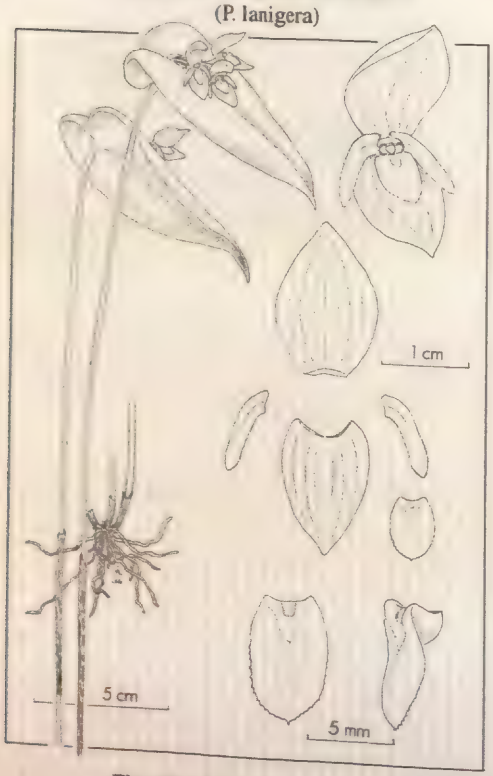


Fig. 40. Acronia carduela

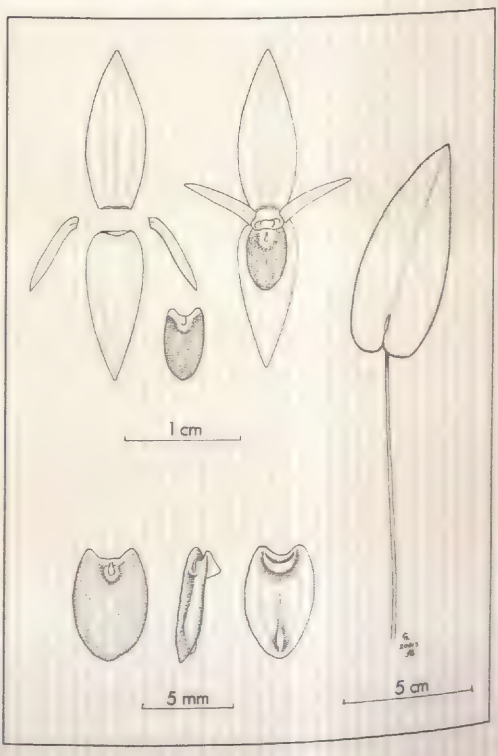


Fig. 41. Acronia carnosa

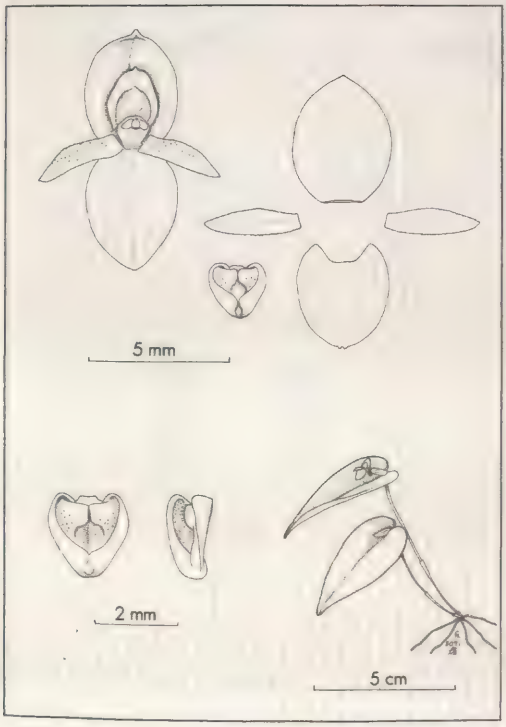


Fig. 42. Acronia carrenoi

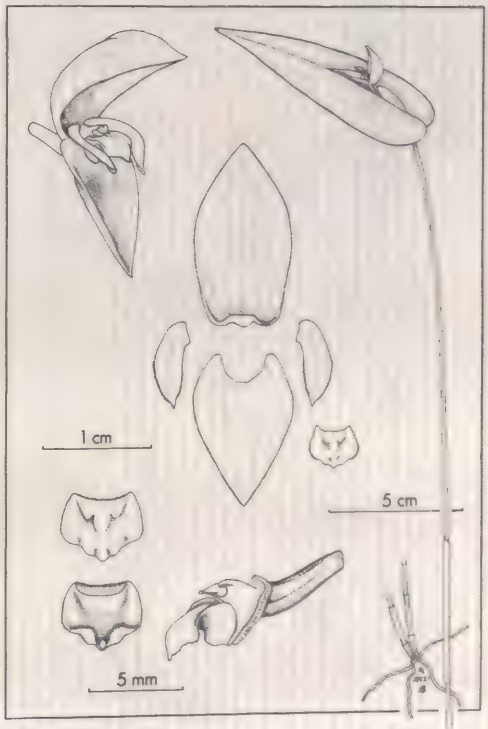


Fig. 43. Acronia cassidata

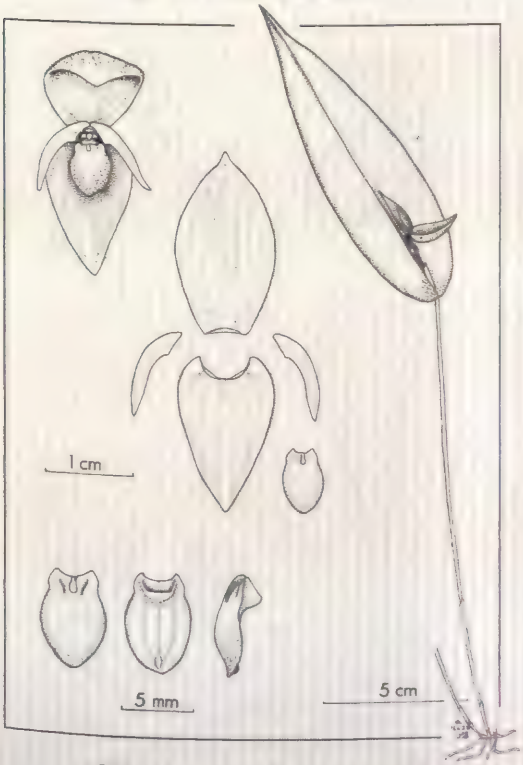


Fig. 44a. Acronia cedrinorum

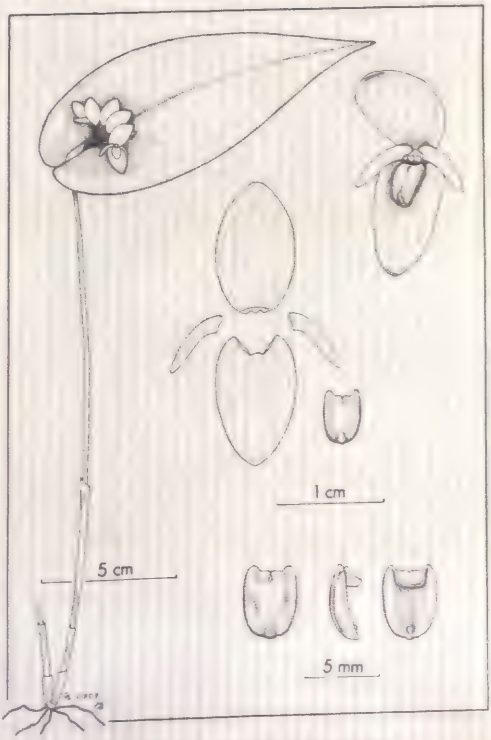


Fig. 44b. Acronia cedrinorum
(P. embreei)

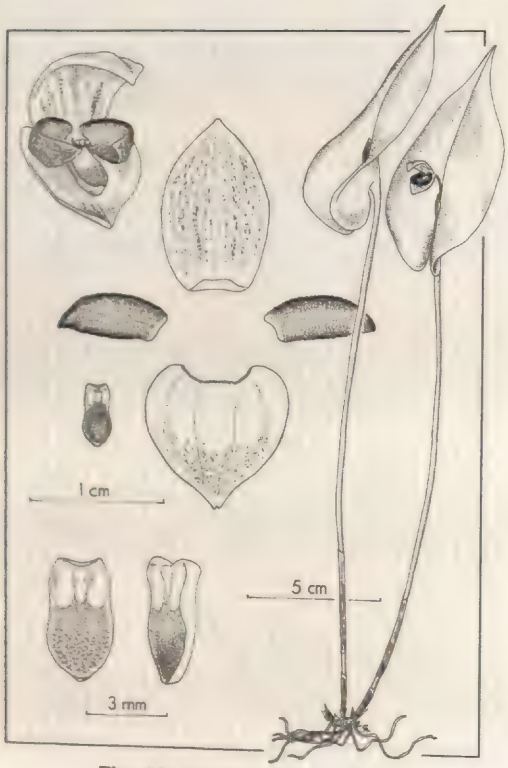


Fig. 45. Acronia chama

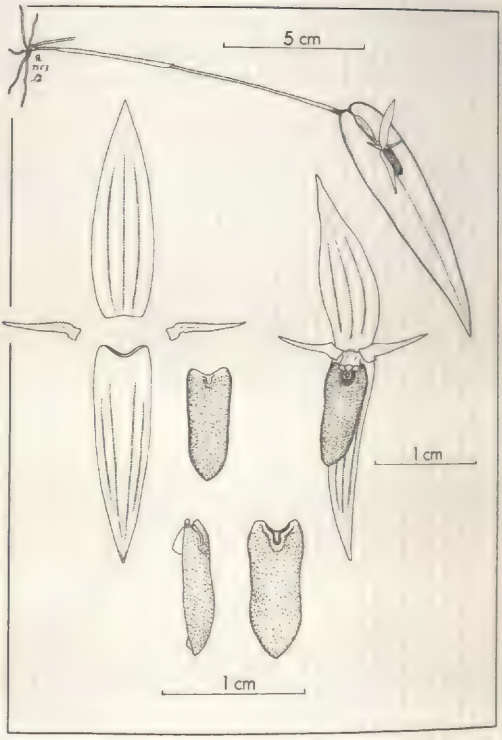


Fig. 46. Acronia chaparensis

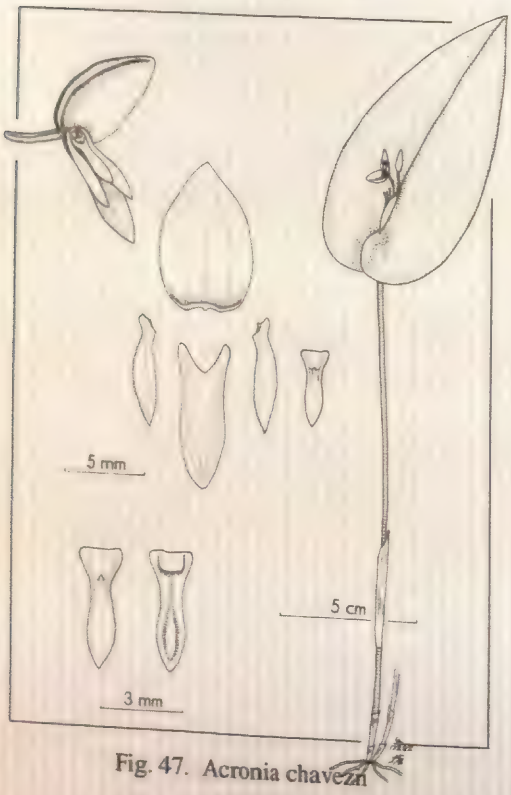


Fig. 47. Acronia chavezii

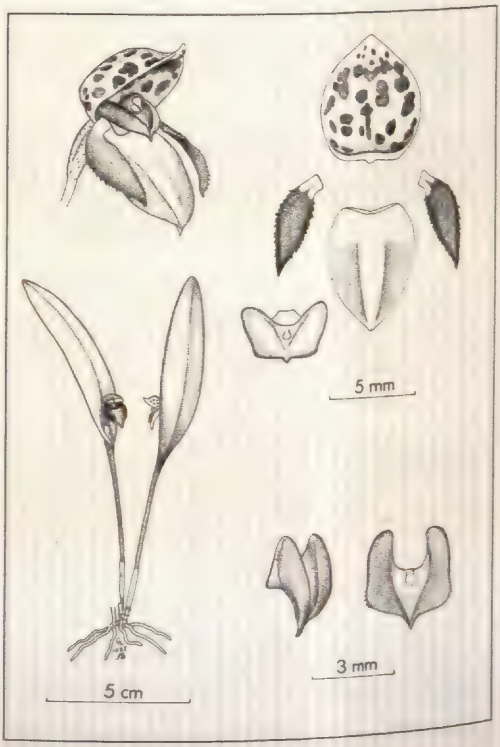


Fig. 48. Acronia cobraeformis

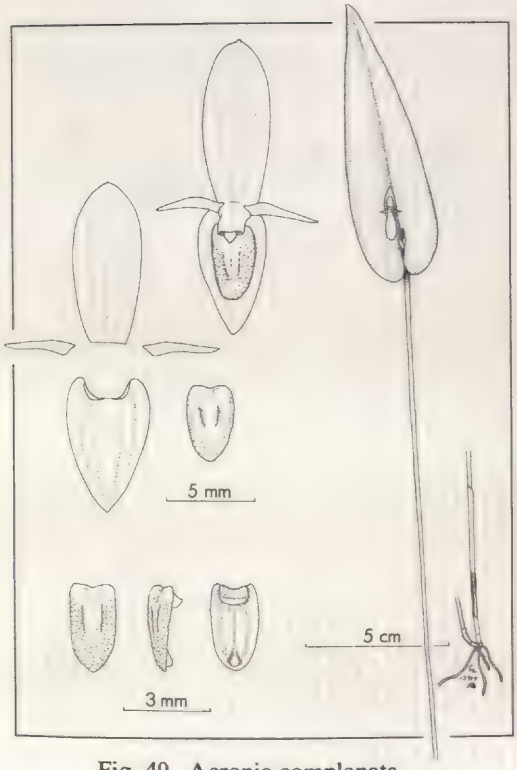


Fig. 49. Acronia complanata

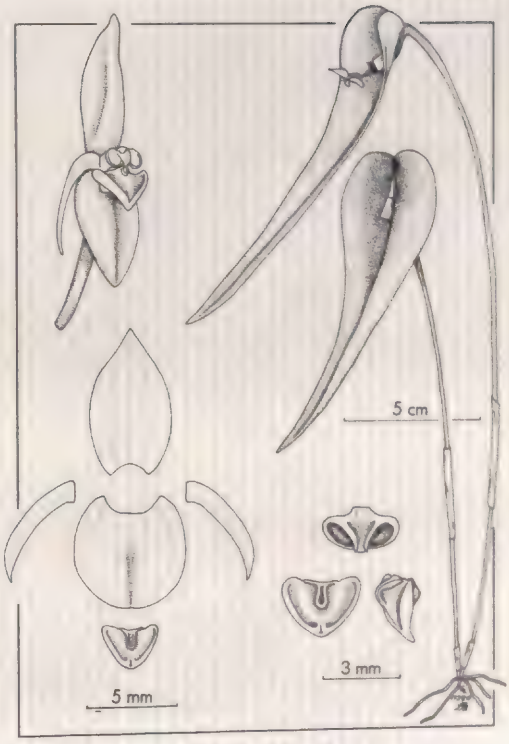


Fig. 50. Acronia compressa

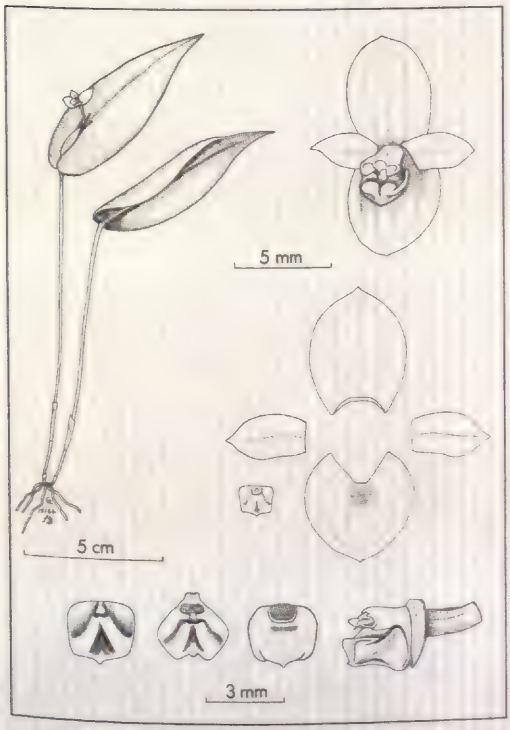


Fig. 51. Acronia conicostigma

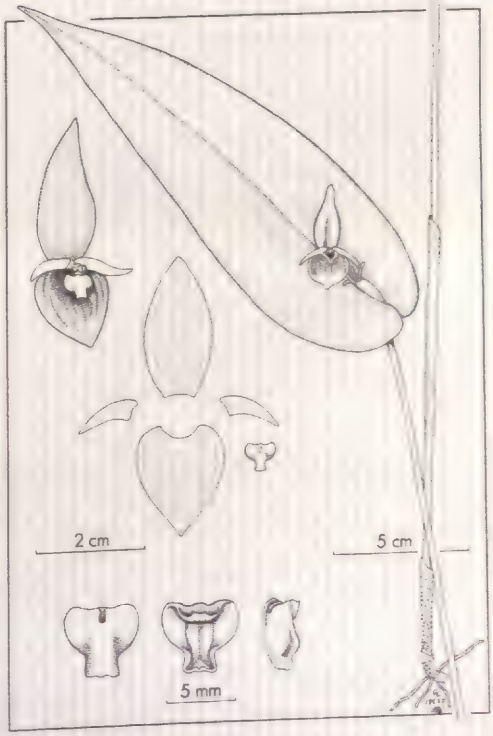


Fig. 52. Acronia constricta

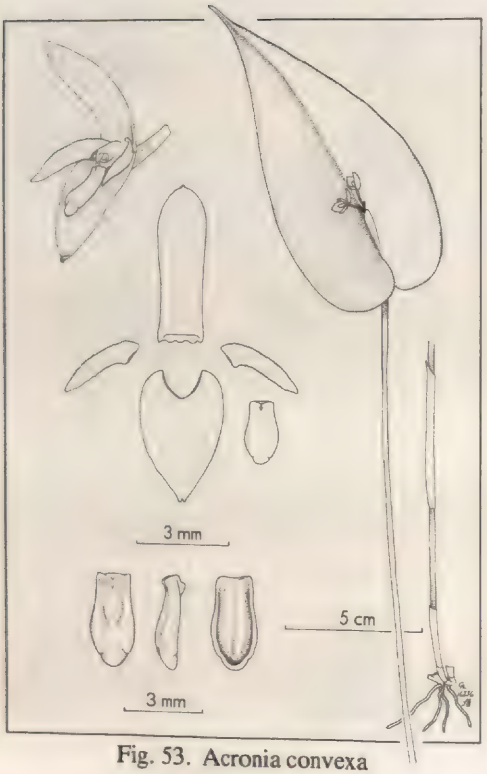


Fig. 53. Acronia convexa

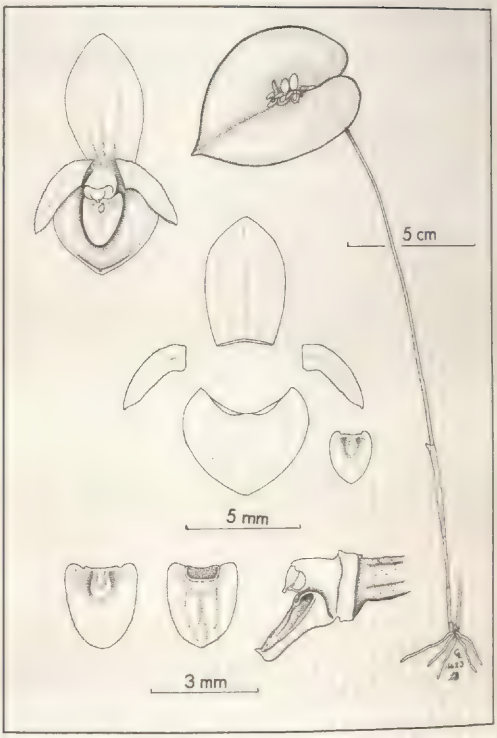


Fig. 54a. Acronia cordata
P. monocardia

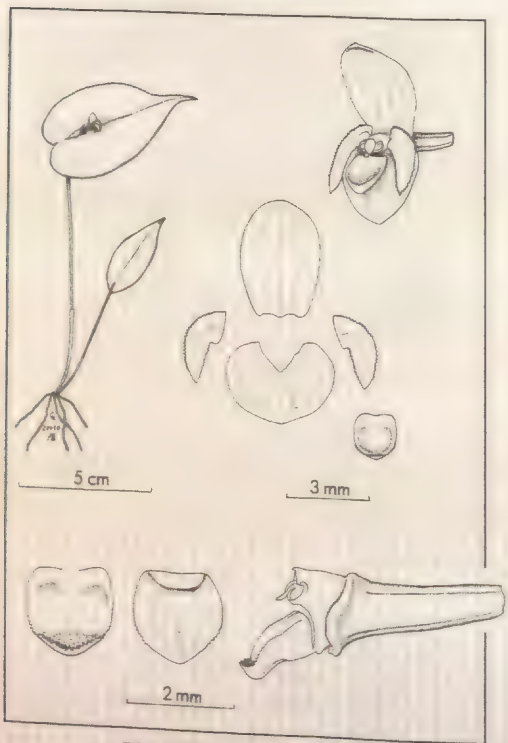


Fig. 54b. Acronia cordata

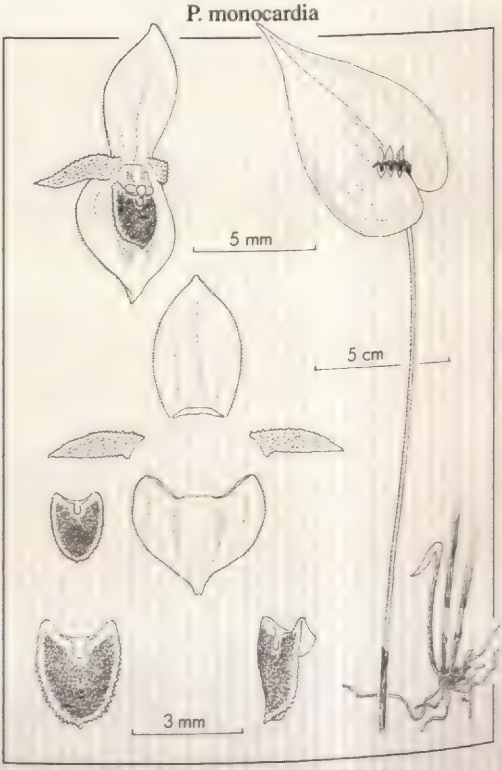


Fig. 54c. Acronia cordata

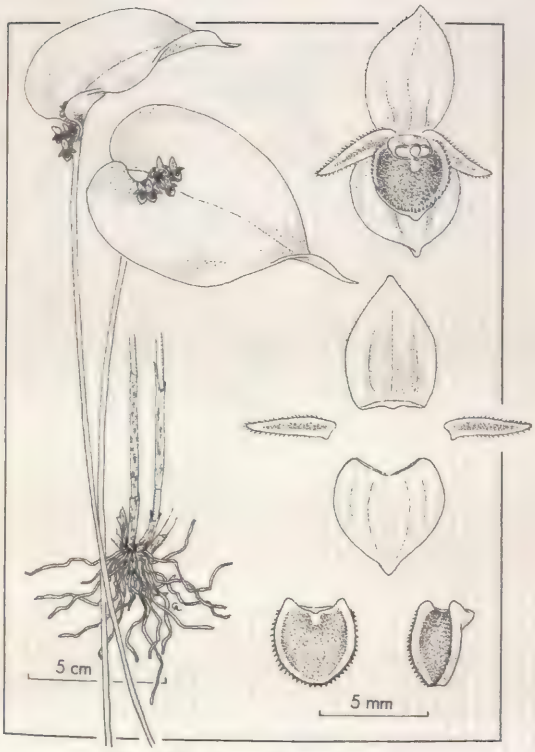


Fig. 54d. Acronia cordata P. erymnochila

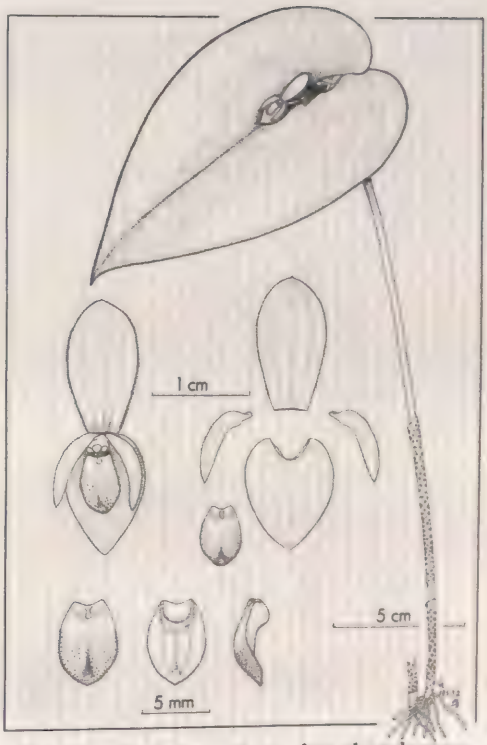


Fig. 55a. Acronia cordata *subsp.* rhopalocarpa

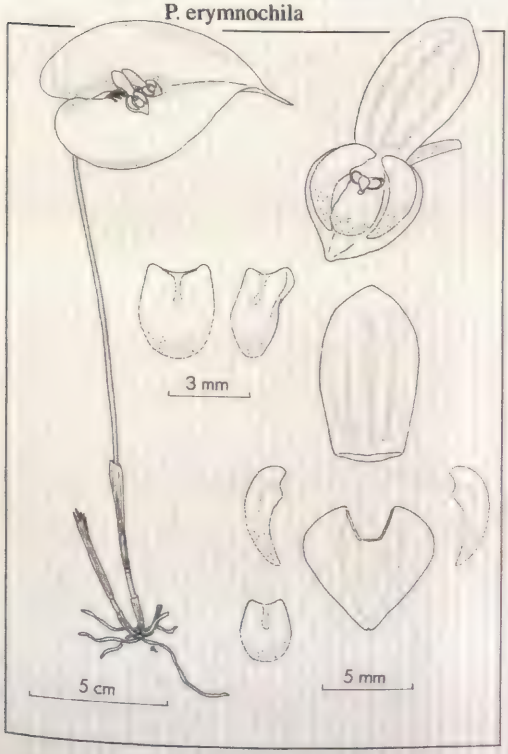


Fig. 55b. Acronia cordata *subsp.* rhopalocarpa

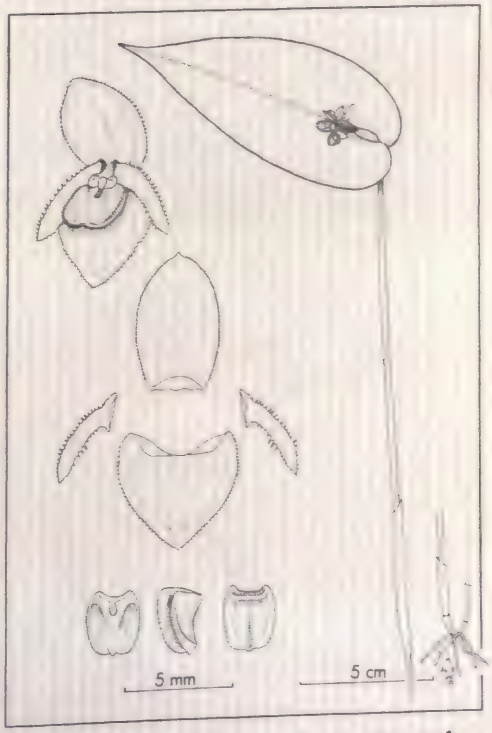


Fig. 56. Acronia cordata *subsp.* trachysepala

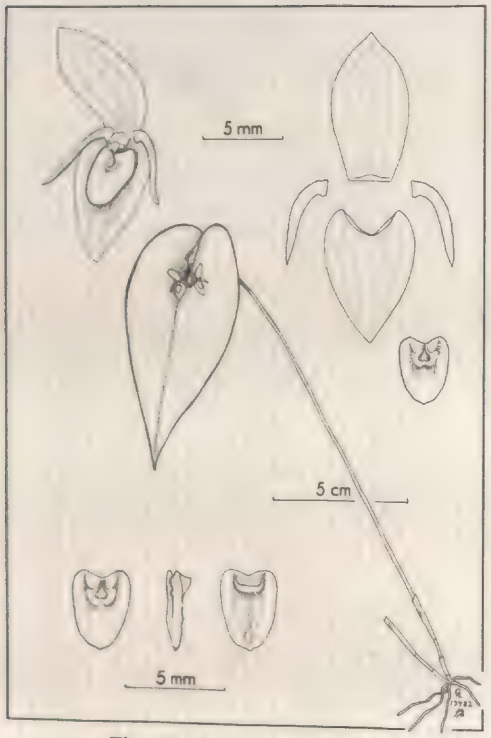


Fig. 57. Acronia cordifolia

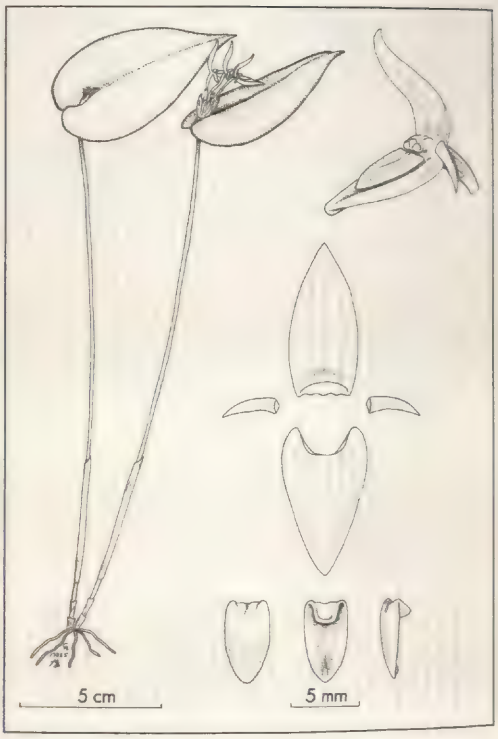


Fig. 58. Acronia coriacardia

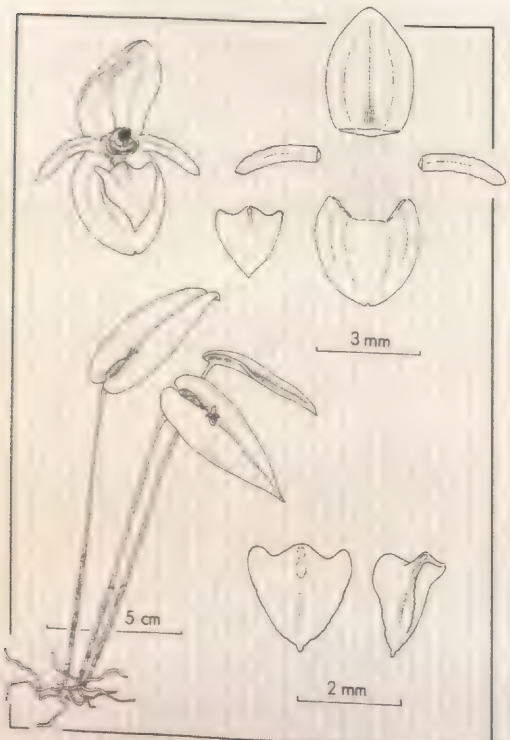


Fig. 59. Acronia correllii

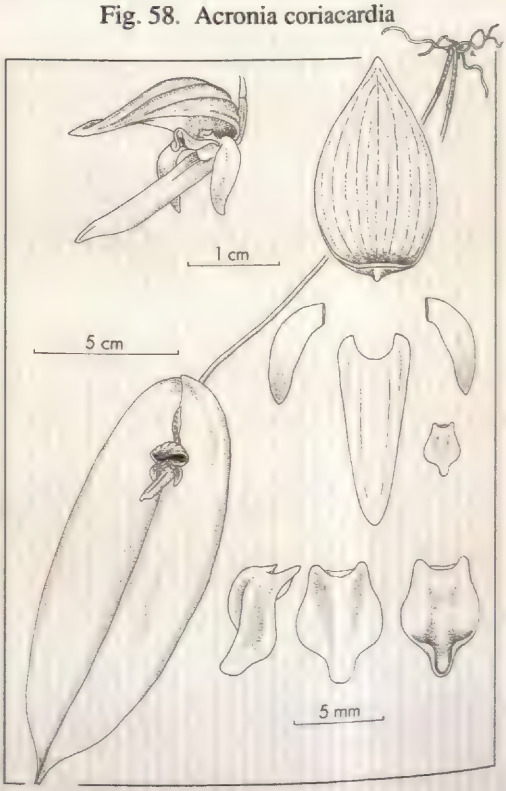


Fig. 60. Acronia corysta

Fig. 61. Acronia crateriformis

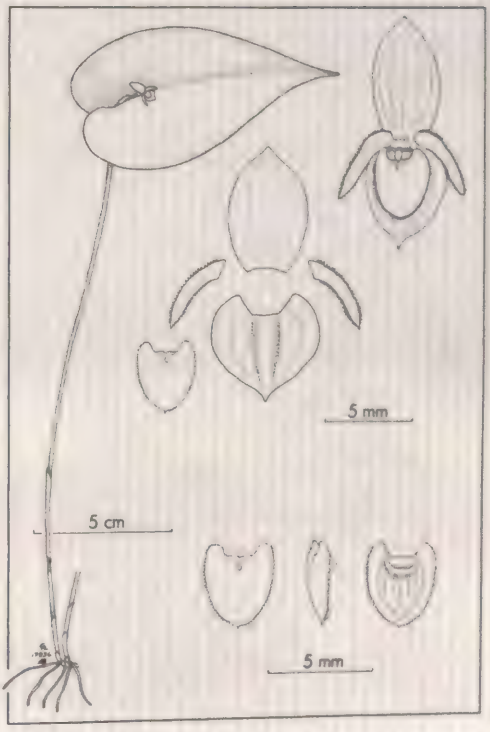


Fig. 62. Acronia crossota

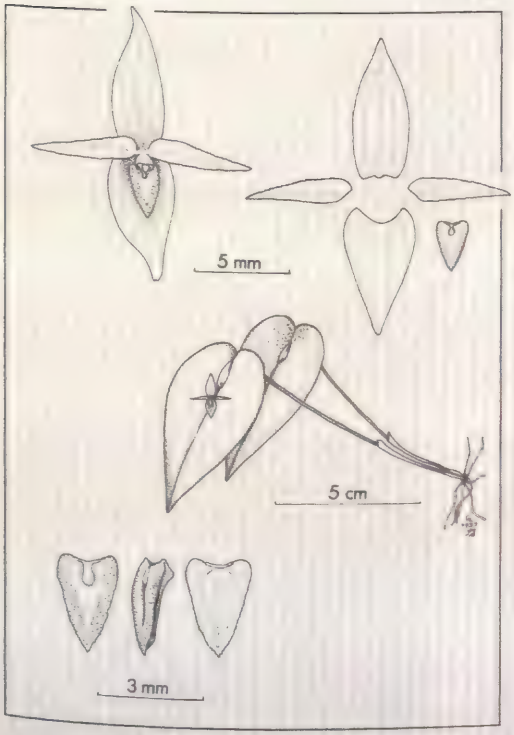


Fig. 63. Acronia crucifera

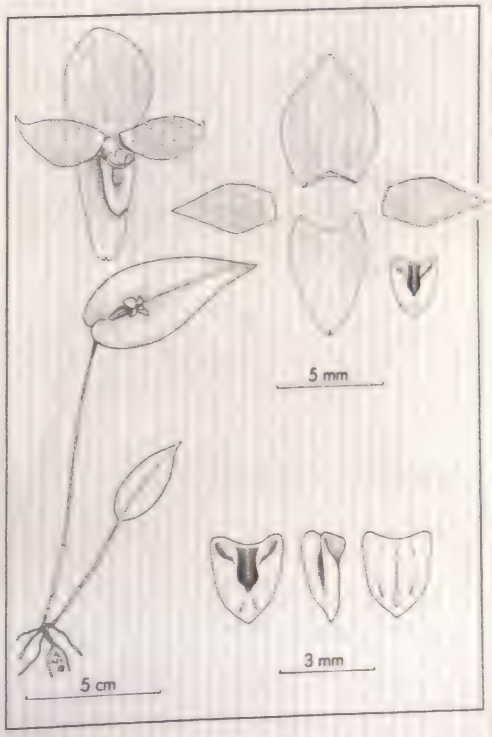


Fig. 64. Acronia culpamea

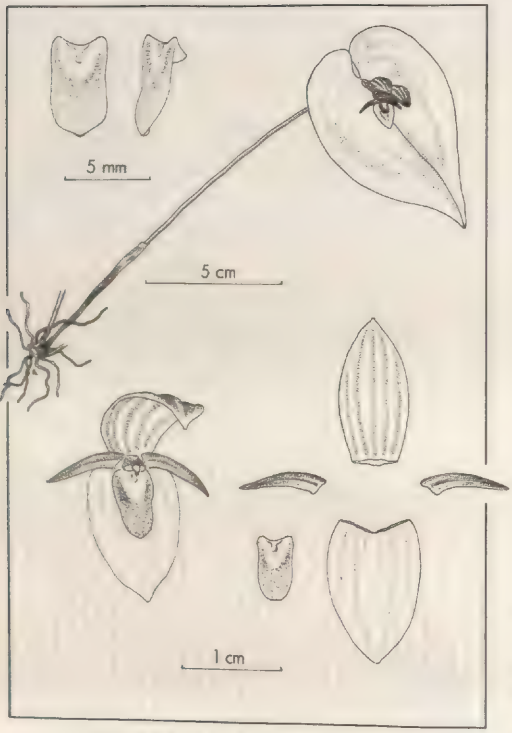


Fig. 65. Acronia cutucuensis

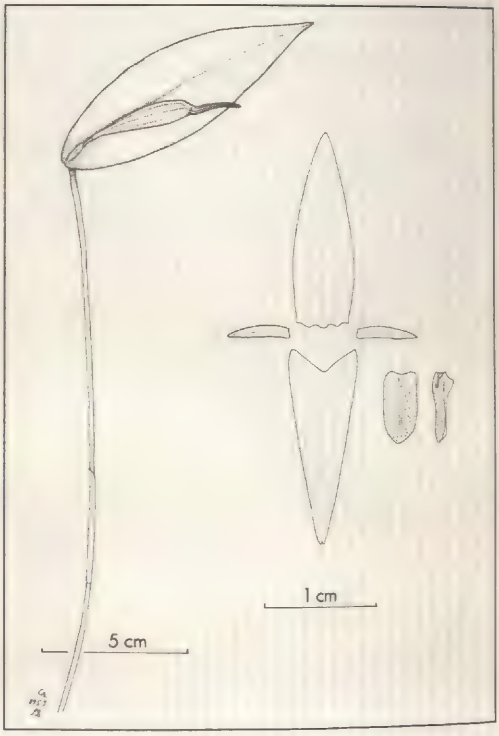


Fig. 66. Acronia cuzcoensis

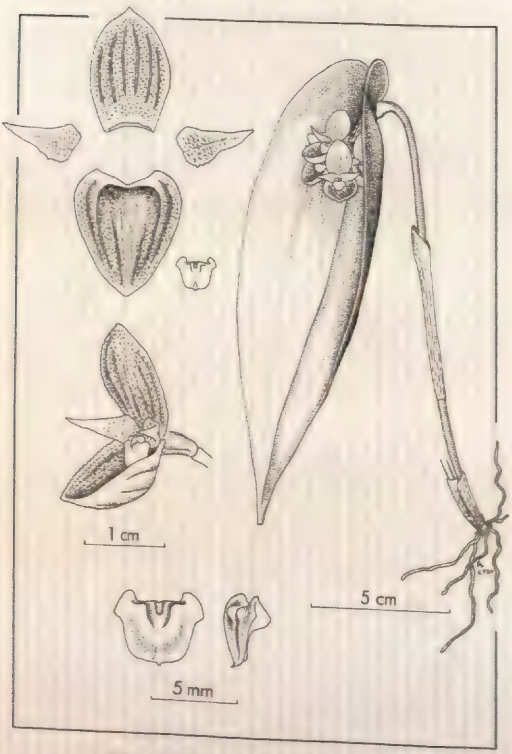


Fig. 67. Acronia cyanea

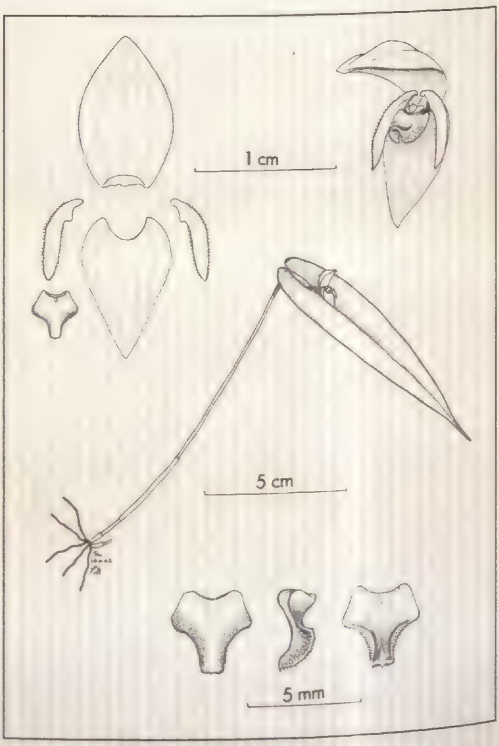


Fig. 68. Acronia deflexa

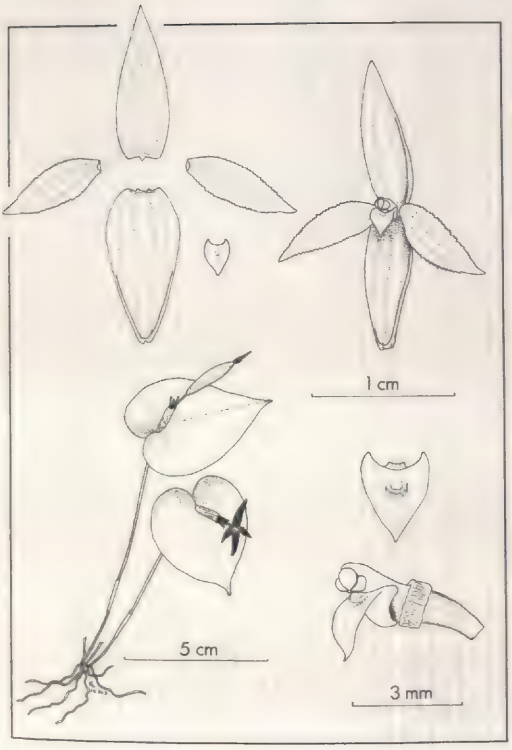


Fig. 69. Acronia dejavu

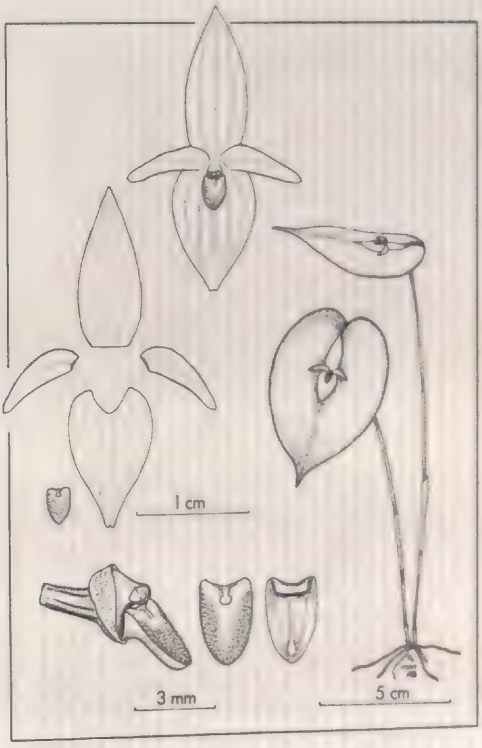


Fig. 70. Acronia depressa

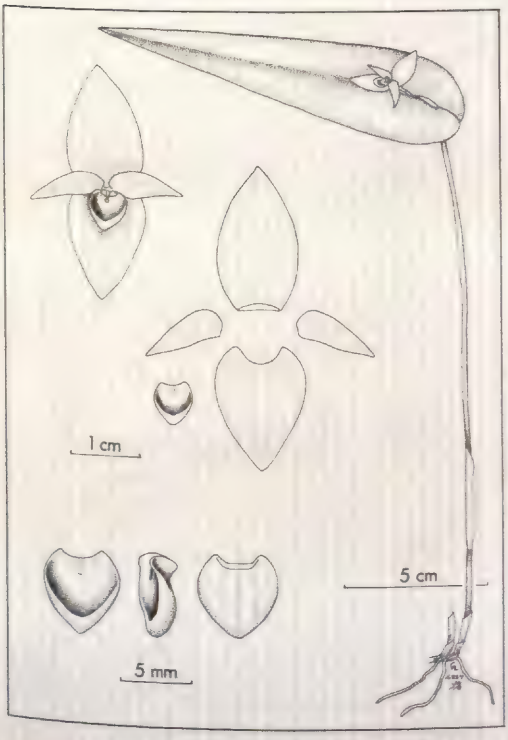


Fig. 71. Acronia dewildei

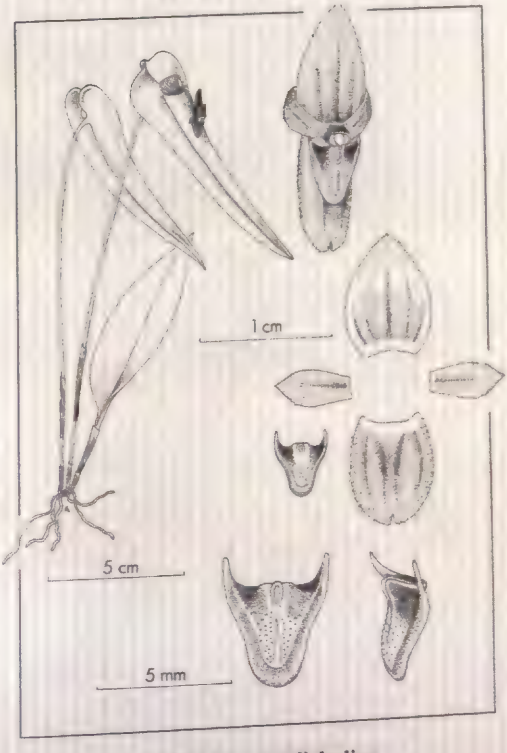


Fig. 72. Acronia diabolica

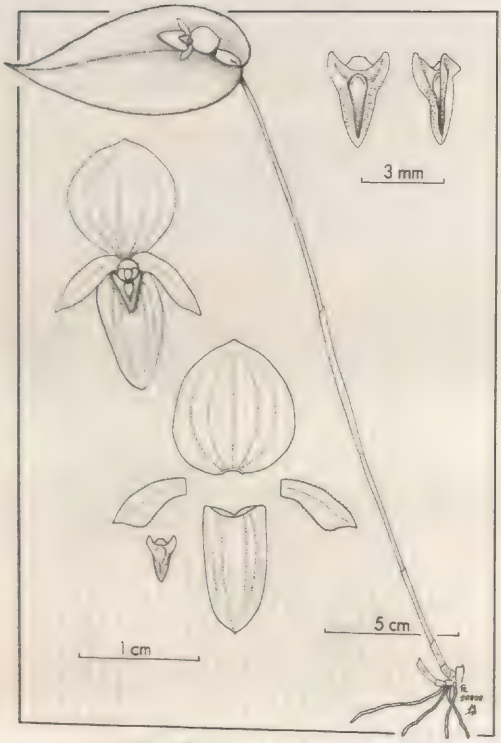


Fig. 73. Acronia diazii

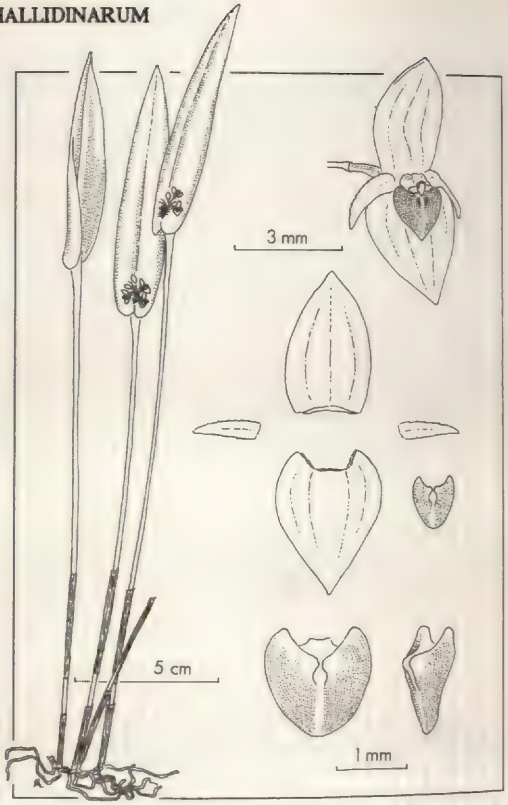


Fig. 74. Acronia dibolia

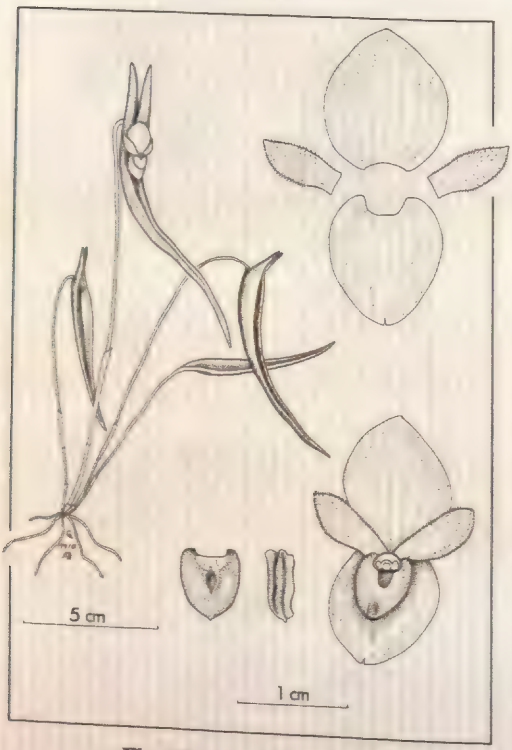


Fig. 75. Acronia dilemma

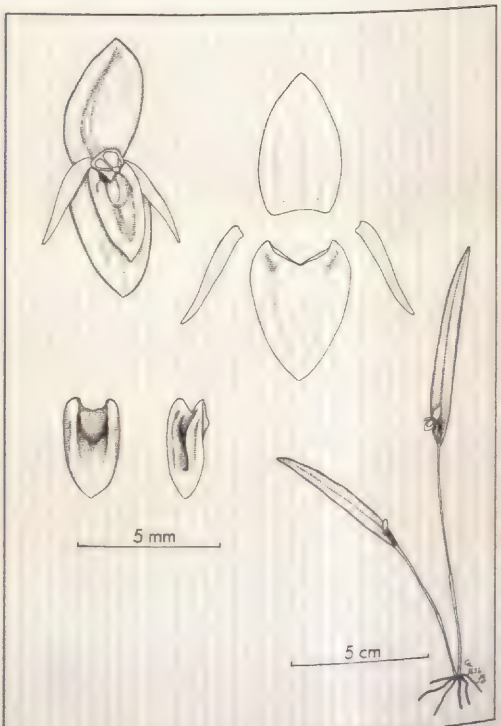


Fig. 76a. Acronia discoidea

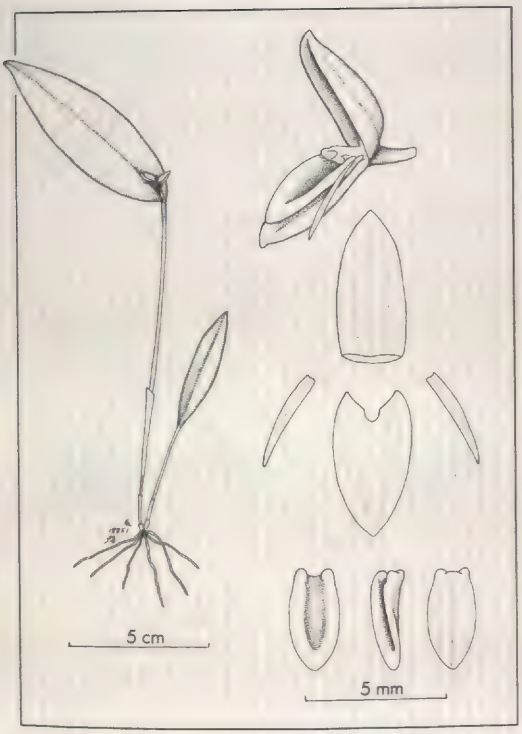


Fig. 76b. Acronia discoidea

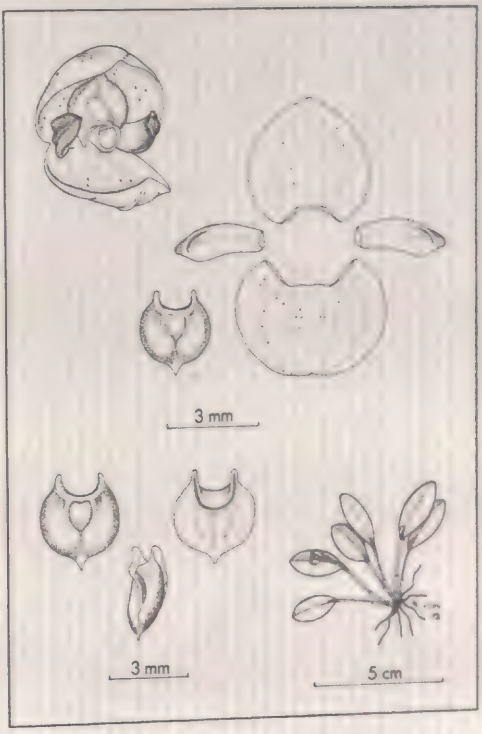


Fig. 77. Acronia dorotheae

Fig. 78. Acronia dracuncula

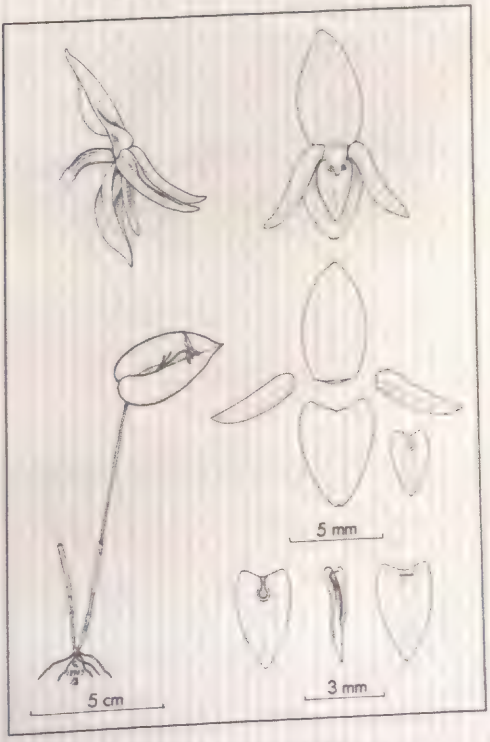


Fig. 79. Acronia dubbeldamii

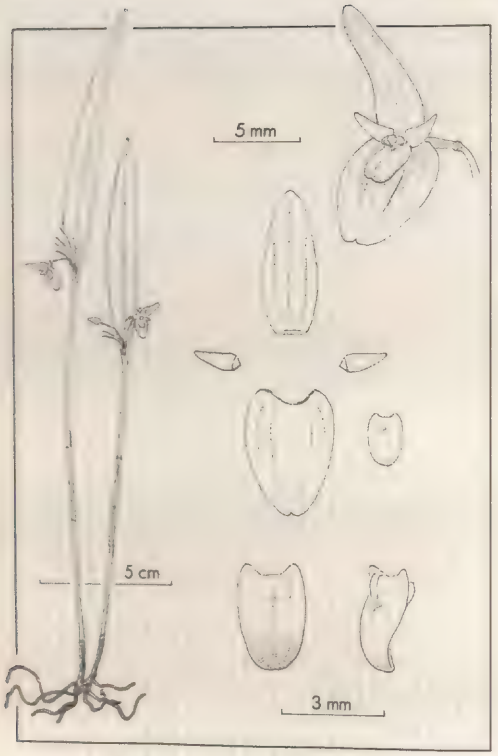


Fig. 80. Acronia ensata

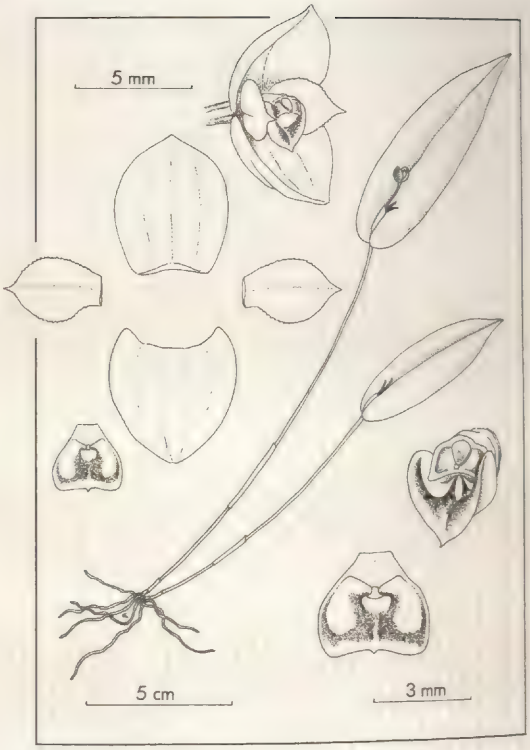


Fig. 81. Acronia epiglottis

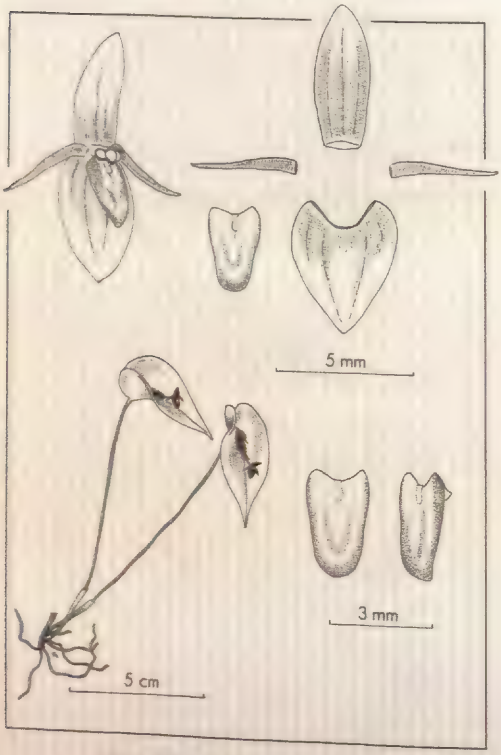


Fig. 82. Acronia erythrium

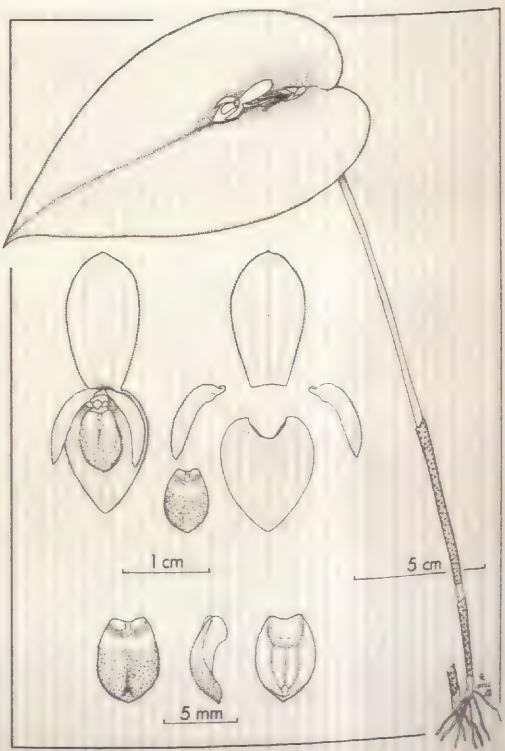


Fig. 83. Acronia escobarii

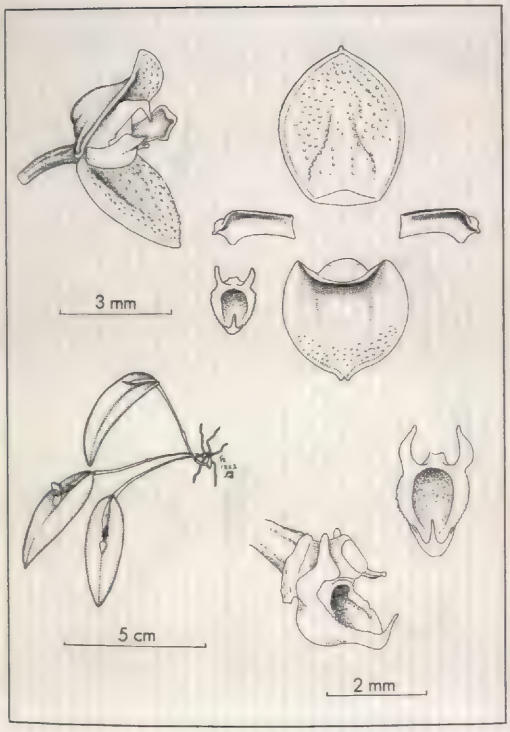


Fig. 84. Acronia excavata

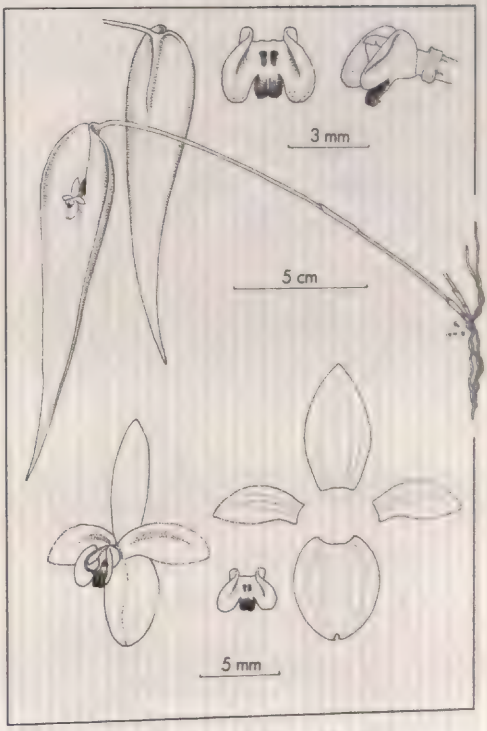


Fig. 85. Acronia fantastica

Fig. 86. Acronia folsomii

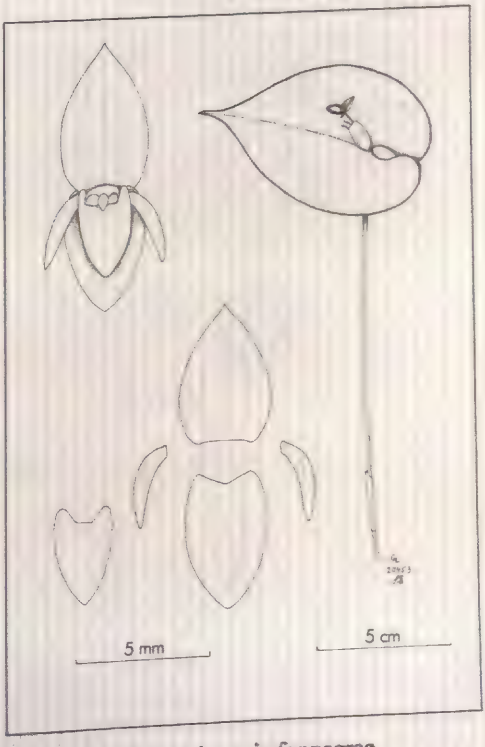


Fig. 87. Acronia fonnegrae

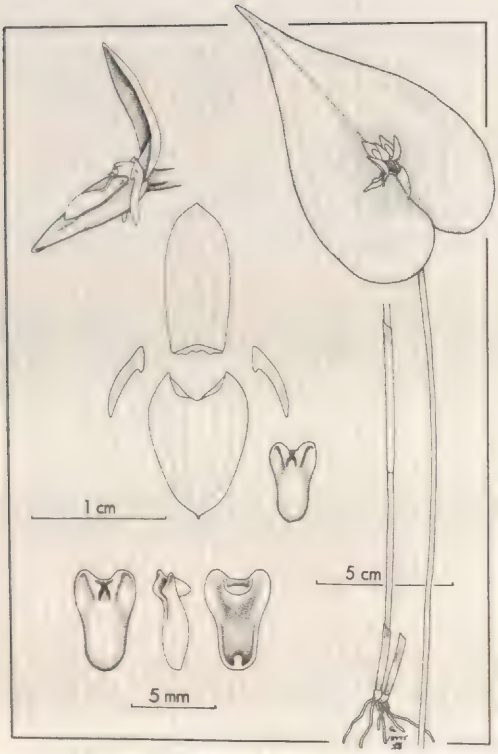


Fig. 88. Acronia fossulata

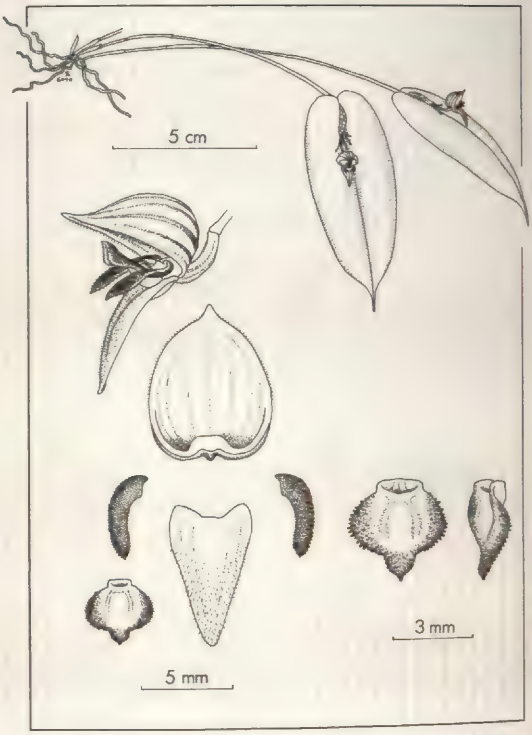


Fig. 89. Acronia galerita

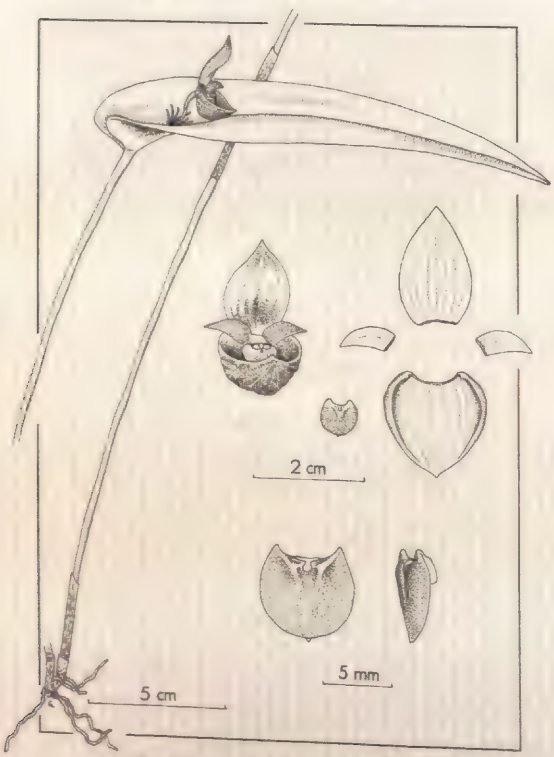


Fig. 90. Acronia ganymedes

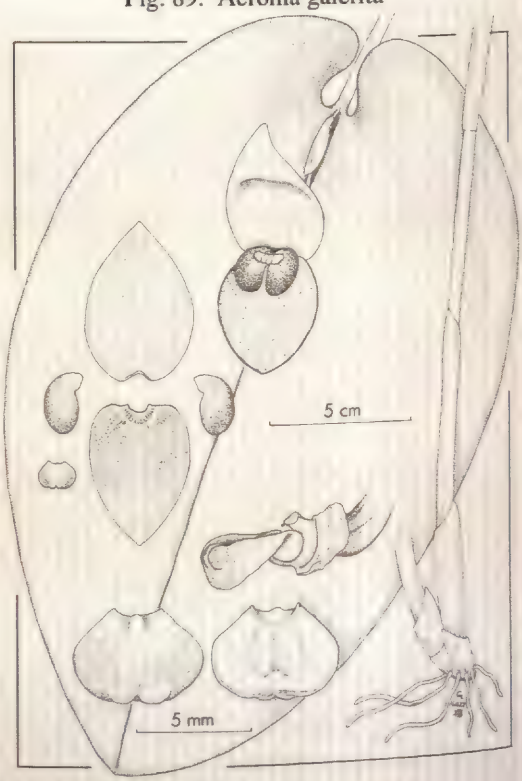


Fig. 91. Acronia gargantua

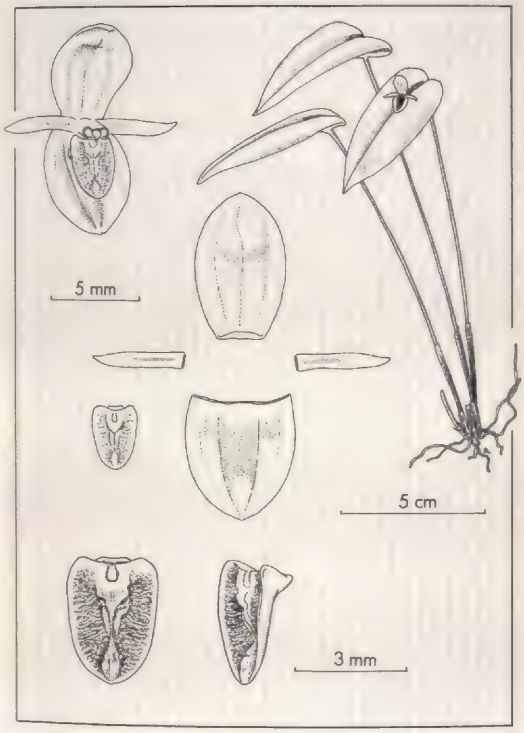


Fig. 92. Acronia geographica

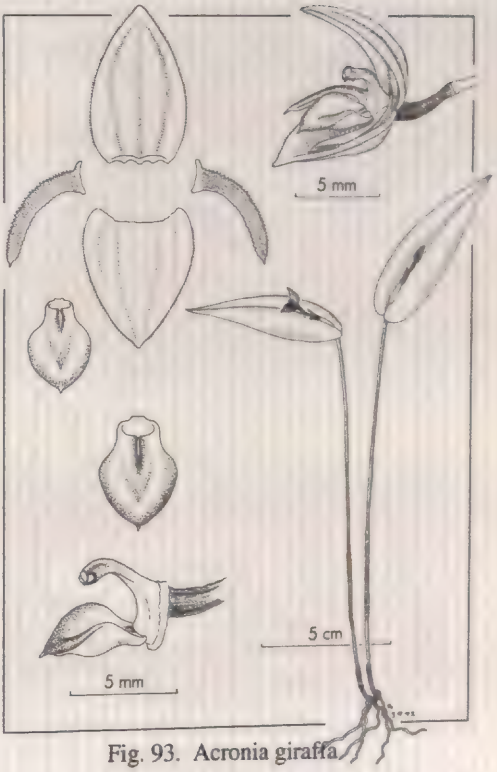


Fig. 93. Acronia giraffa

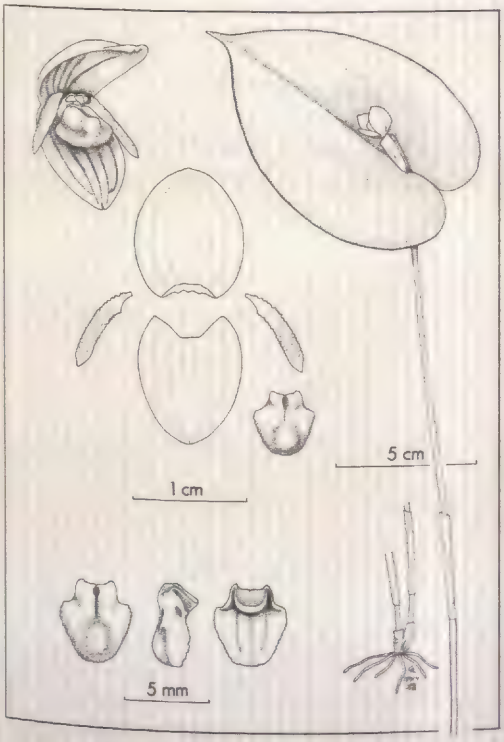


Fig. 94. Acronia giraldoi

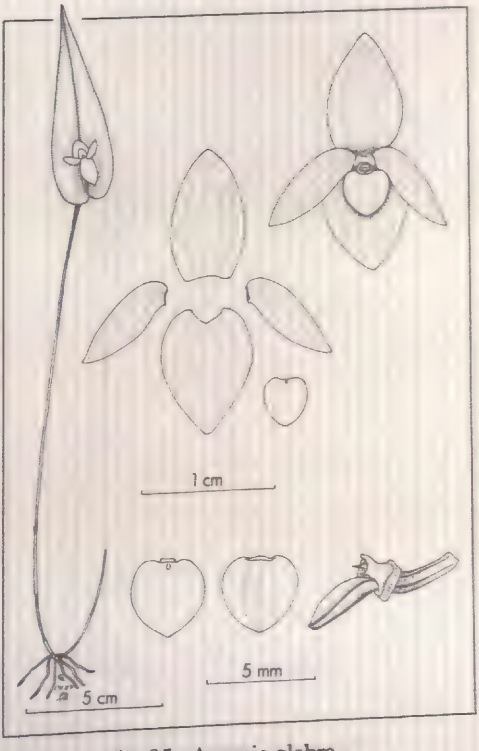


Fig. 95. Acronia glabra

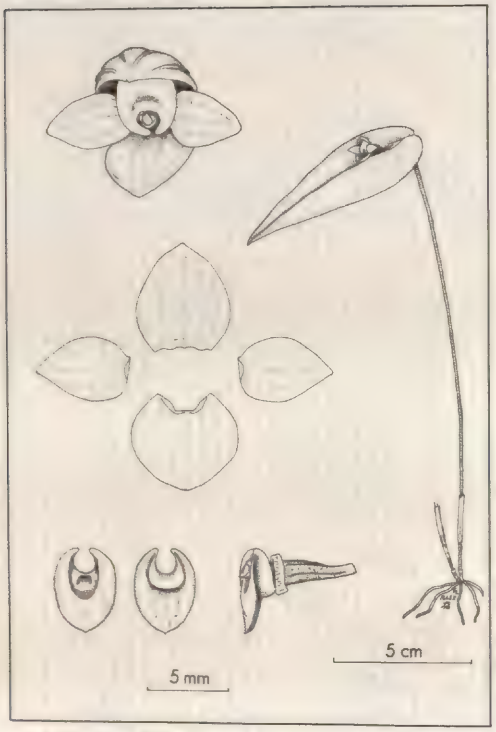


Fig. 96. Acronia globosa

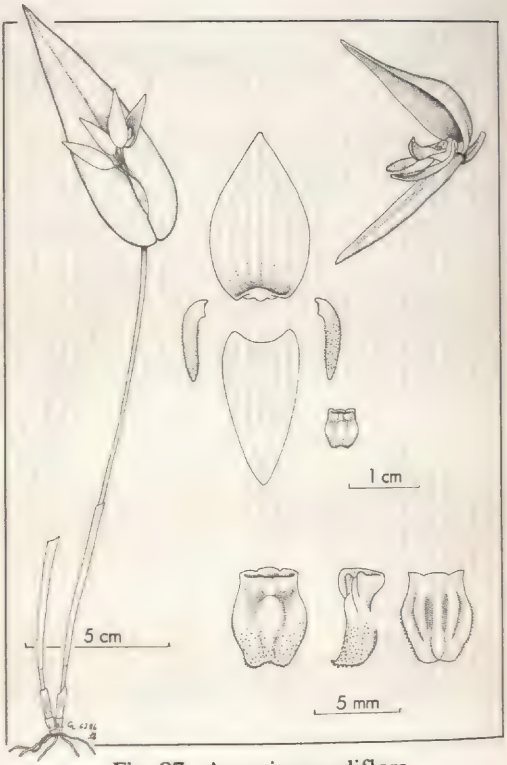


Fig. 97. Acronia grandiflora

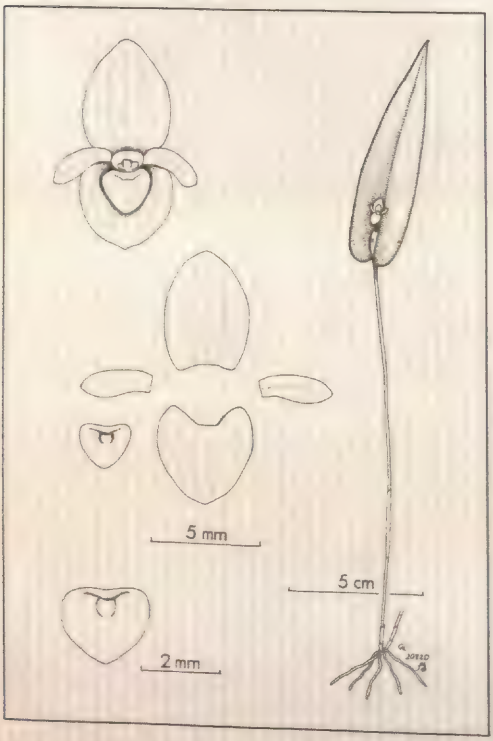


Fig. 98. Acronia hawkinsii

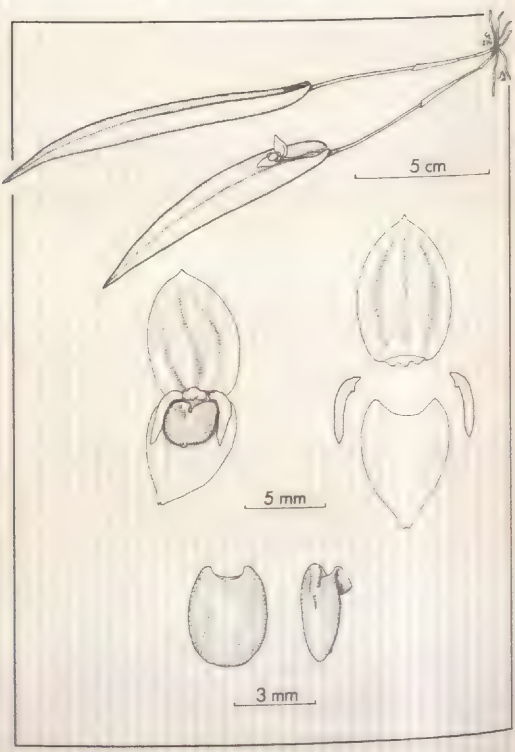


Fig. 99. Acronia hemileuca

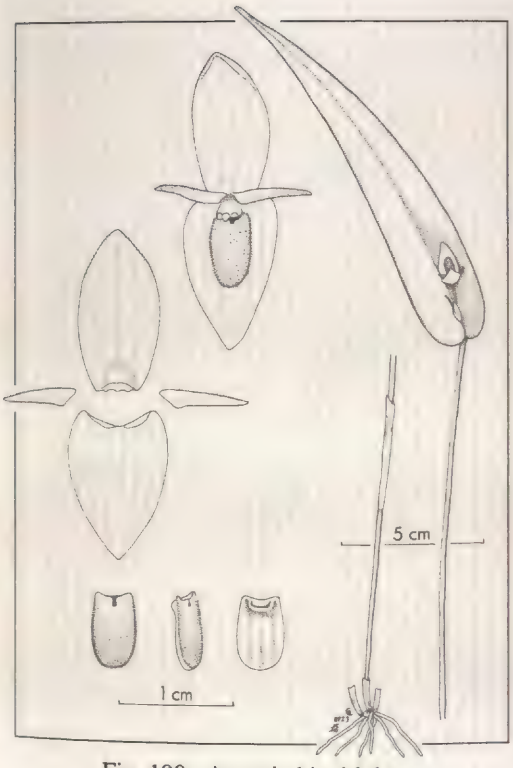


Fig. 100. Acronia hispidula

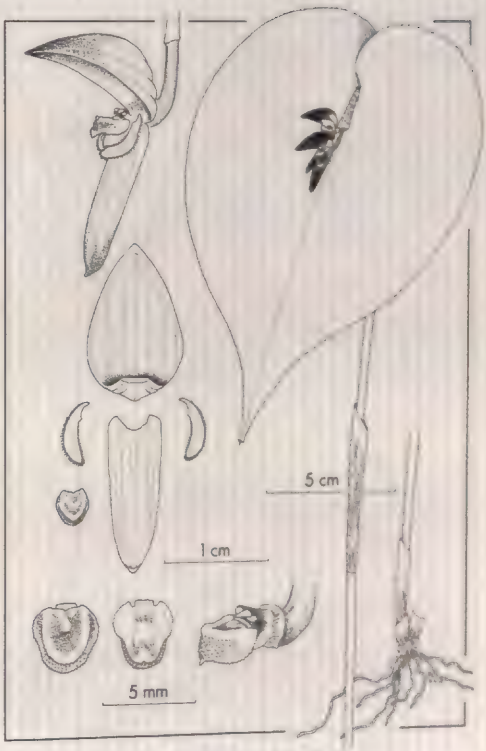


Fig. 101. Acronia hoeijeri

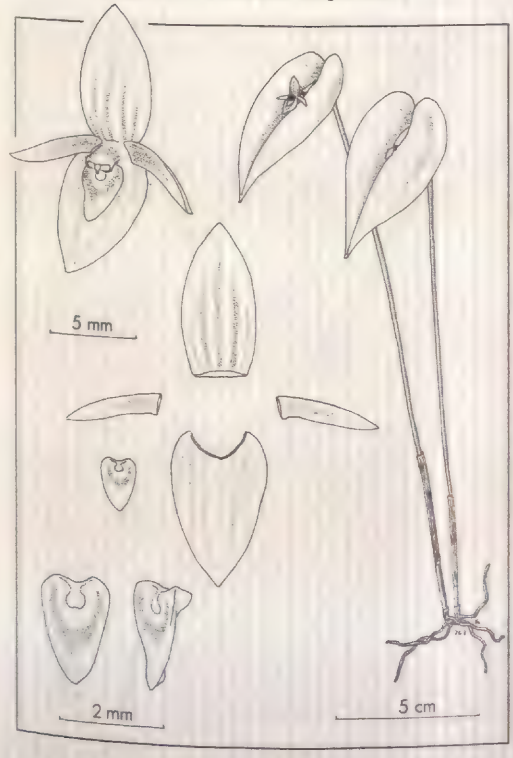


Fig. 102. Acronia homalantha

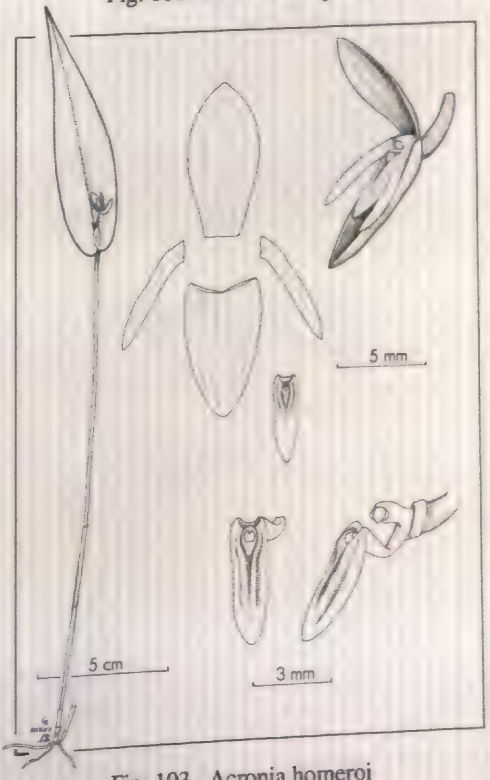


Fig. 103. Acronia homeroi

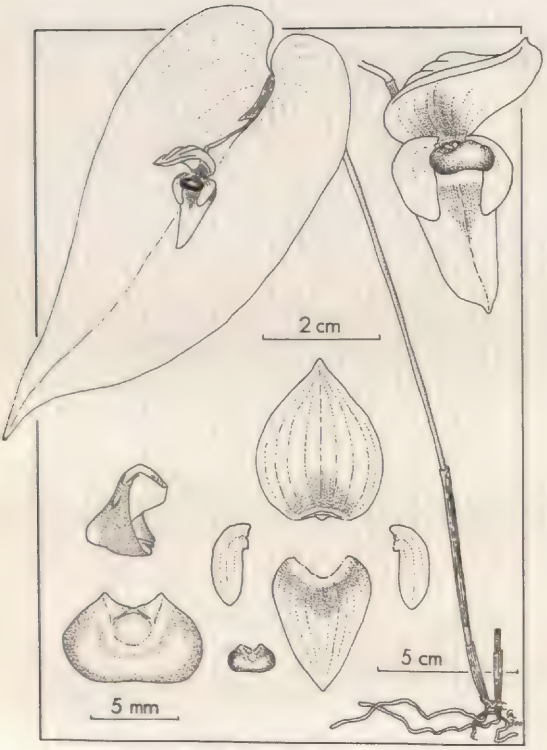


Fig. 104. Acronia imperialis

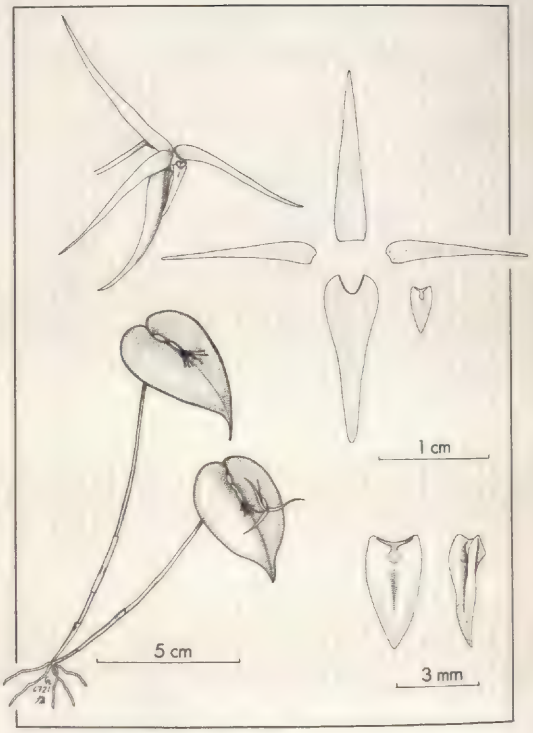


Fig. 105. Acronia index

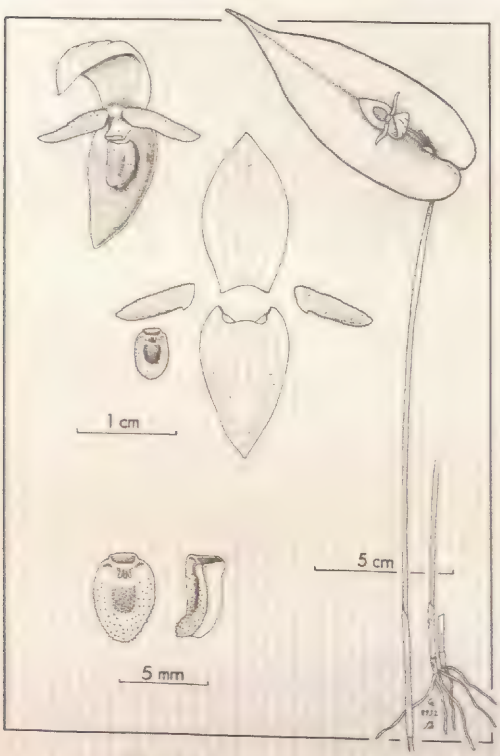


Fig. 106. Acronia iris

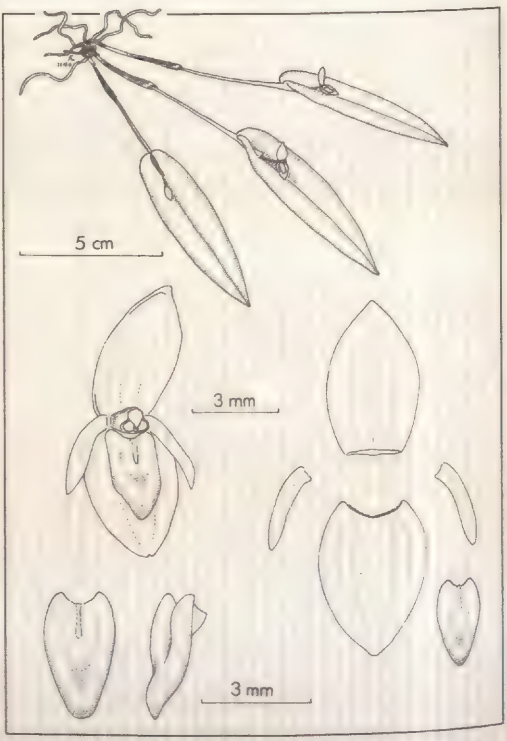


Fig. 107. Acronia isthmica

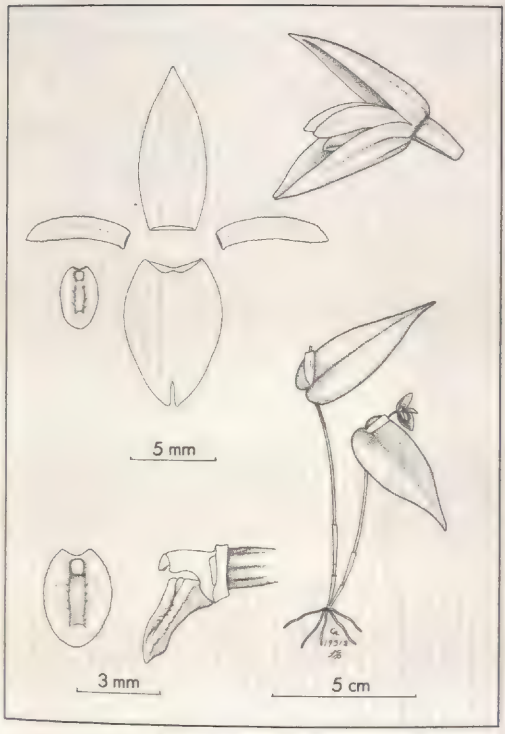


Fig. 108. Acronia jaramilloi

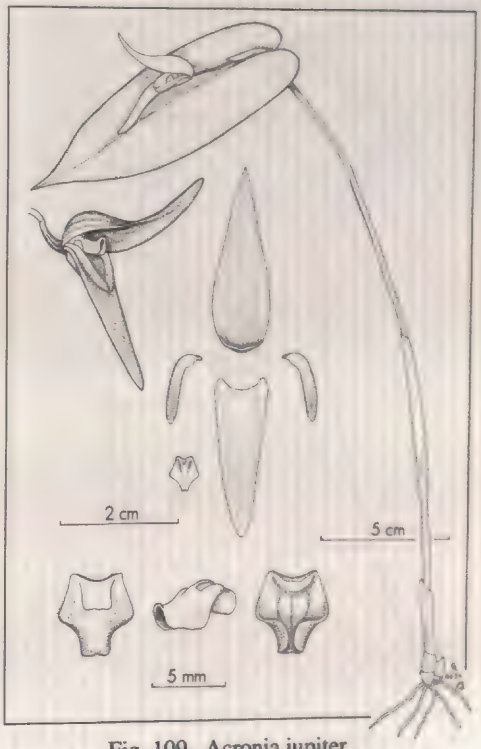


Fig. 109. Acronia jupiter

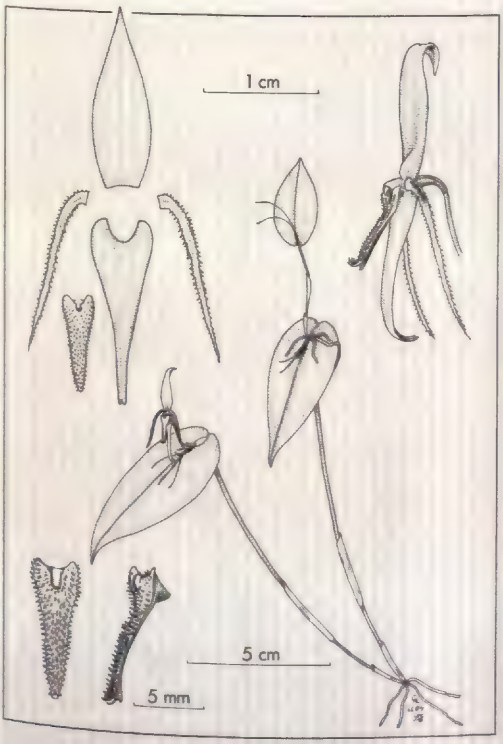


Fig. 110. Acronia killipii

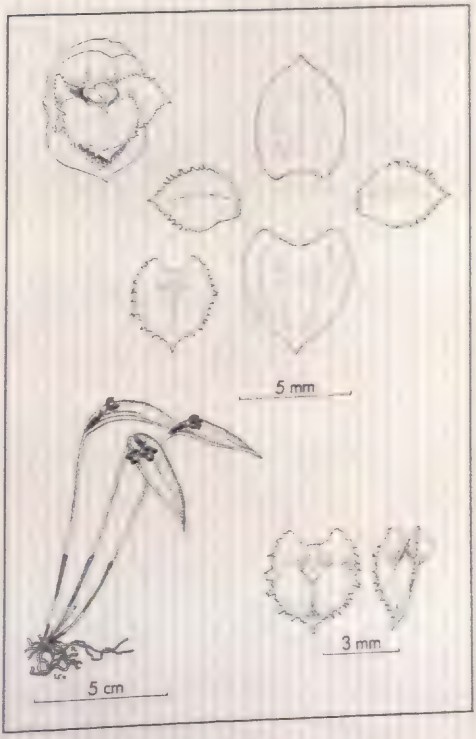


Fig. 111. Acronia lacera

Fig. 112. Acronia latipetala

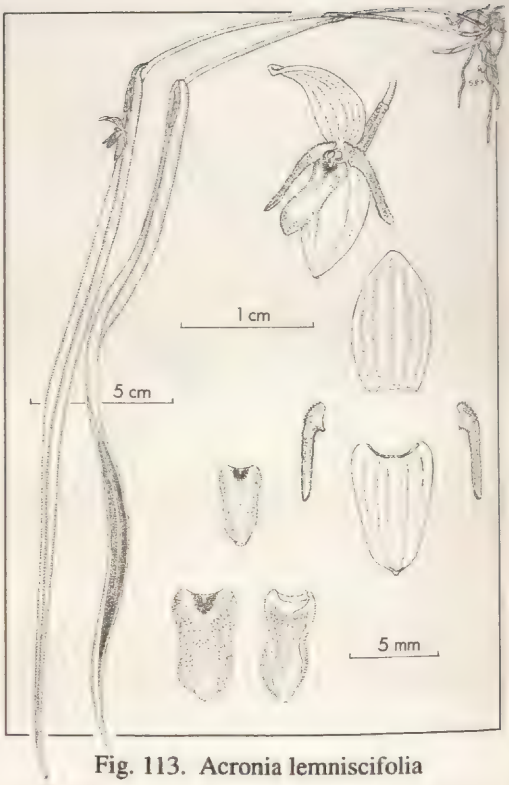


Fig. 113. Acronia lemniscifolia

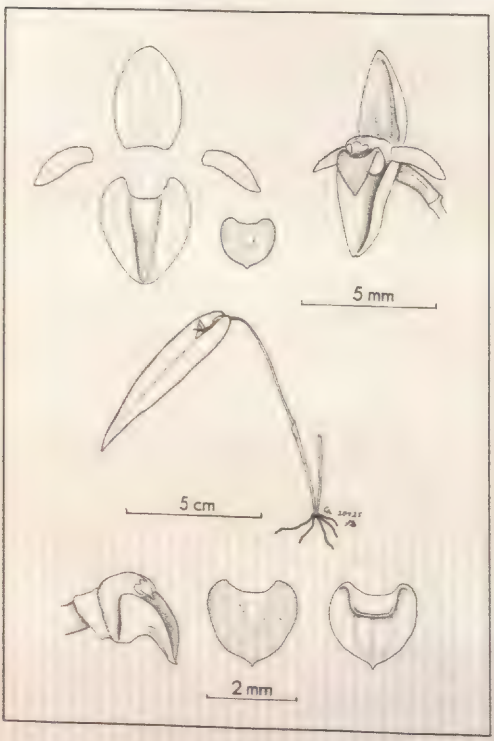


Fig. 114. Acronia leucantha

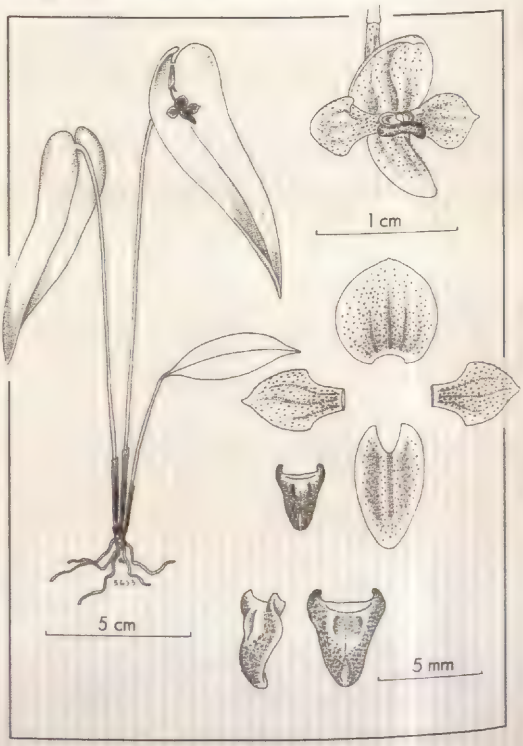


Fig. 115a. Acronia lilijae

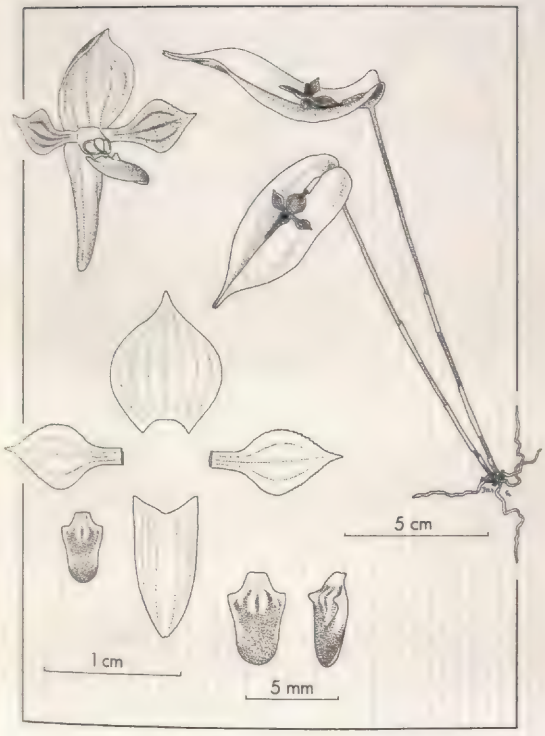


Fig. 115b. Acronia lilijae

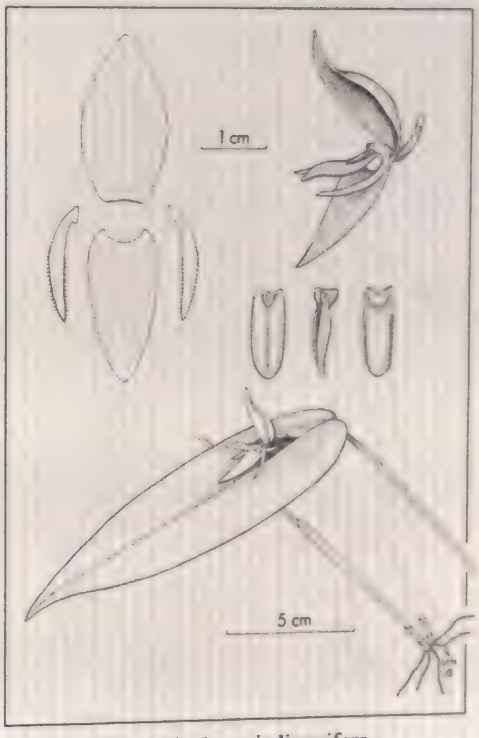


Fig. 116. Acronia linguifera

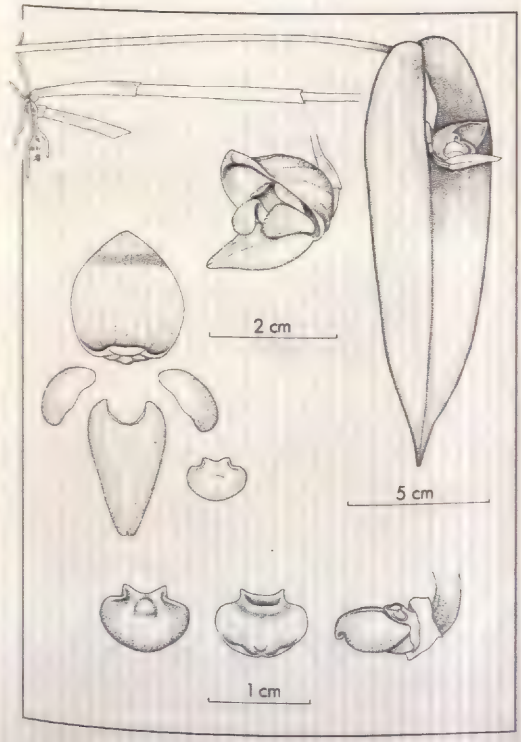


Fig. 117. Acronia llanganatensis

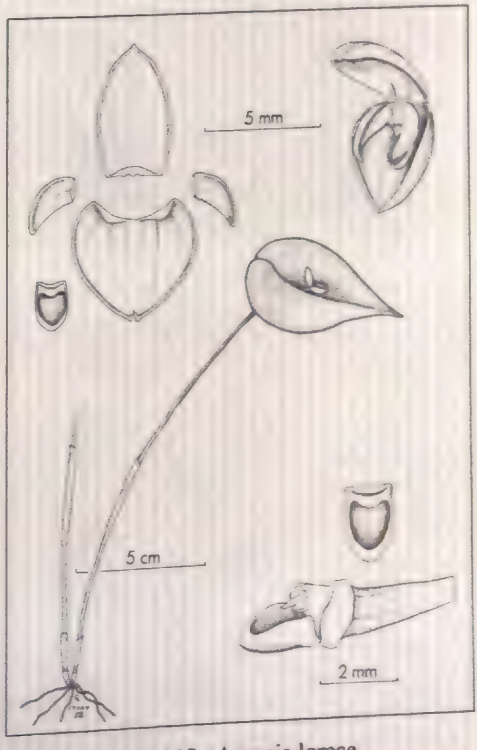


Fig. 118. Acronia loreae

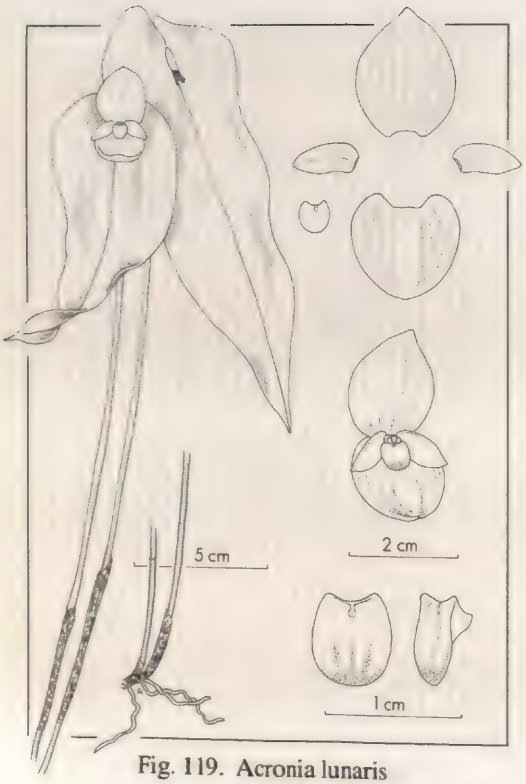


Fig. 119. Acronia lunaris

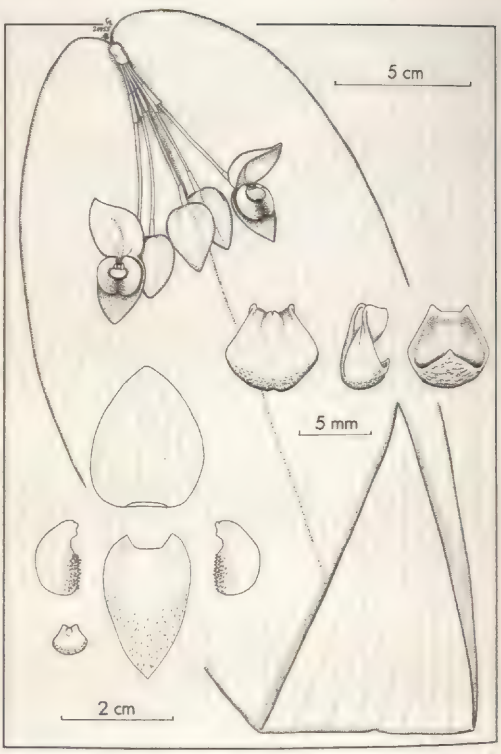


Fig. 120. Acronia lutheri

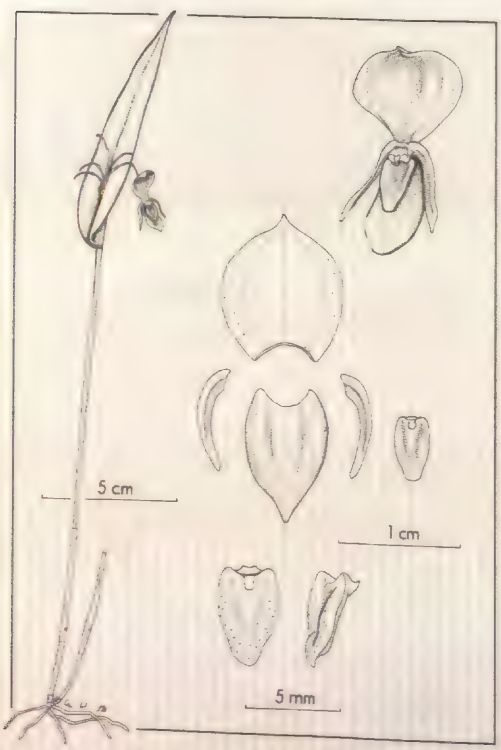


Fig. 121. Acronia macra

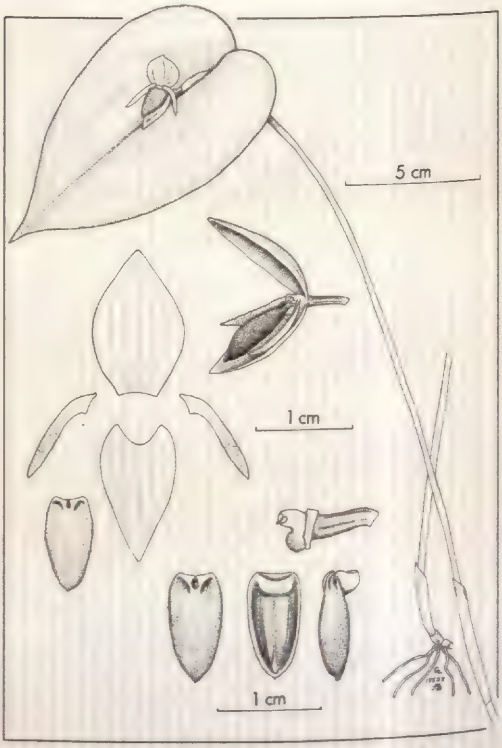


Fig. 122. Acronia macrocardia

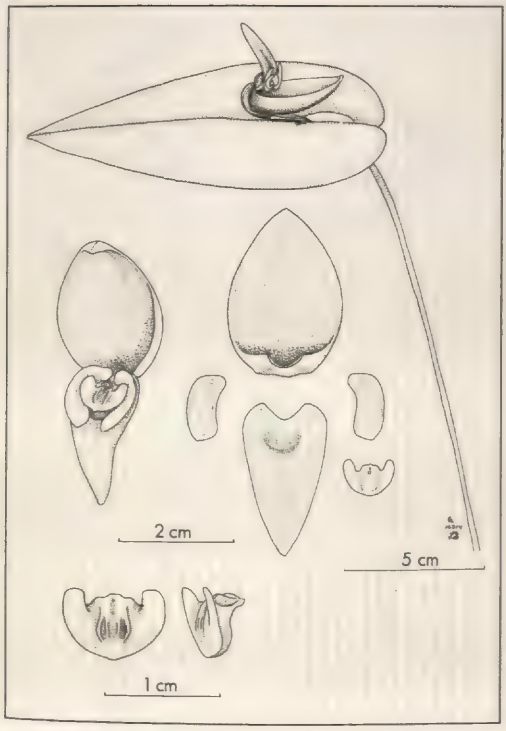


Fig. 123. Acronia maduroi

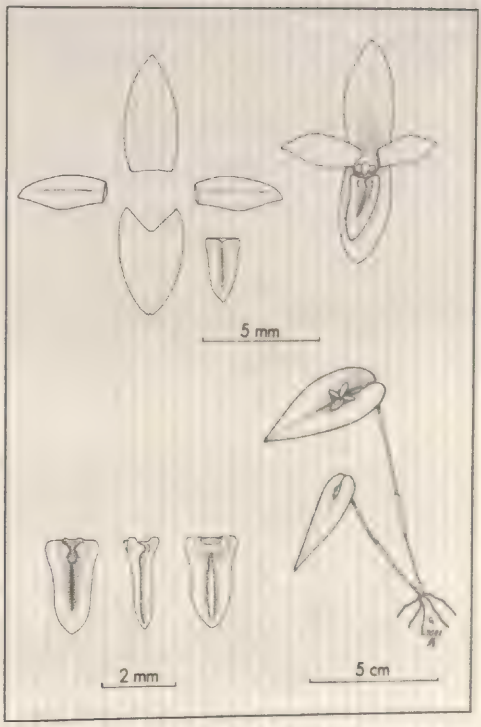


Fig. 124. Acronia magnipetala

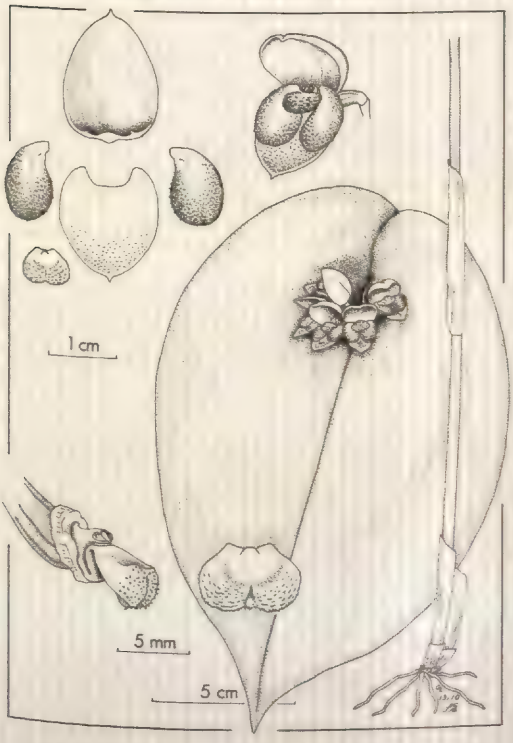


Fig. 125. Acronia marthae

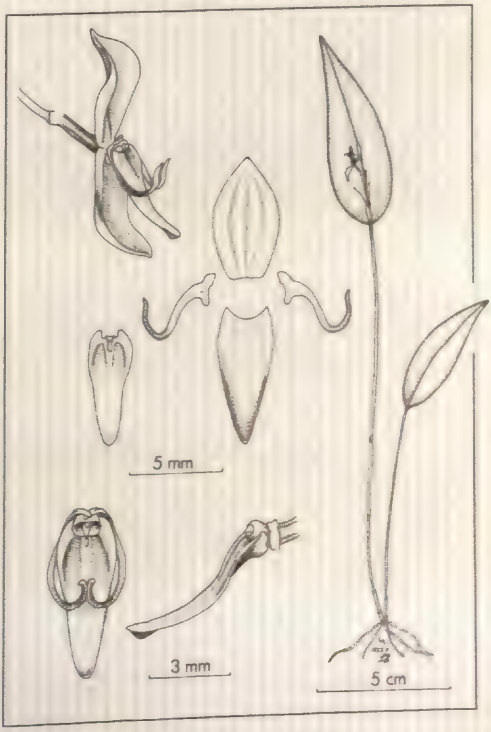


Fig. 126. Acronia mastodon

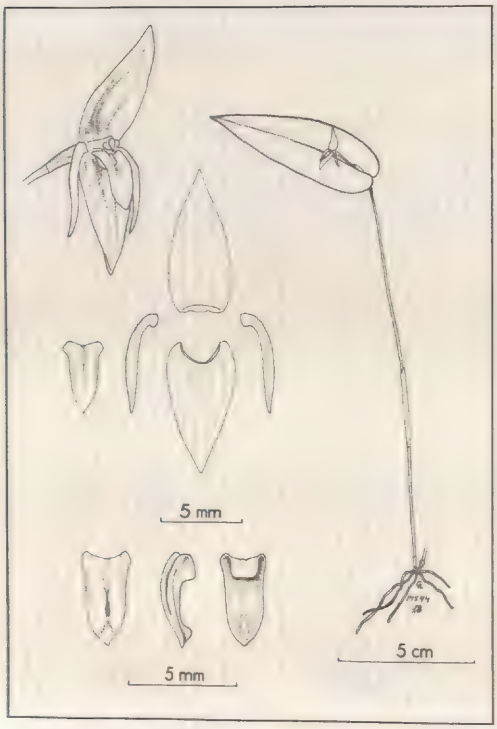


Fig. 127a. Acronia matudana

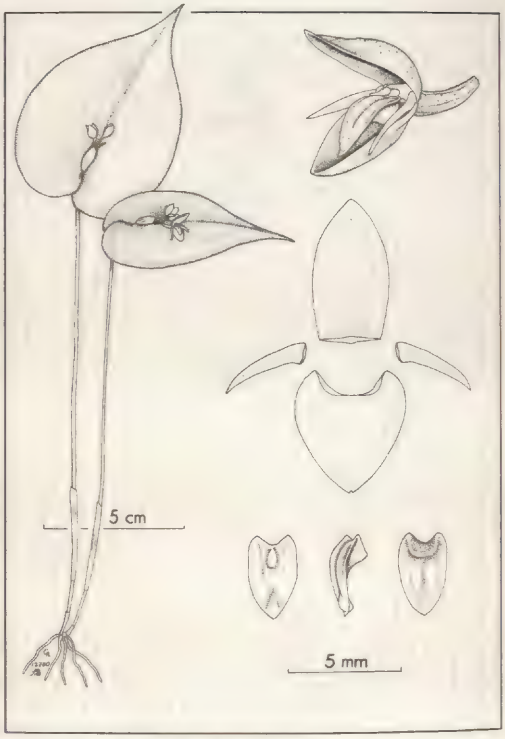


Fig. 127b. Acronia matudana

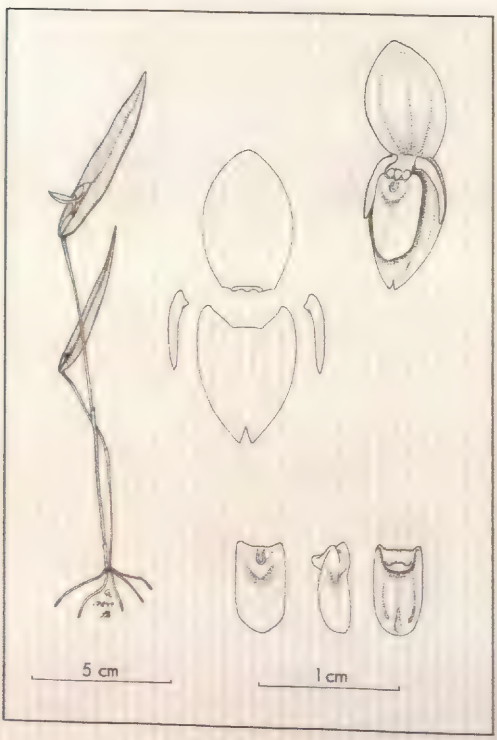


Fig. 128. Acronia megaglossa

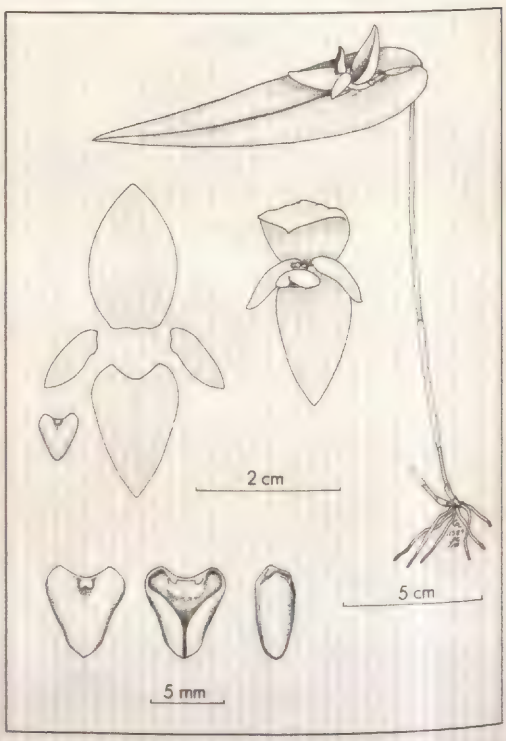


Fig. 129. Acronia megalorhina

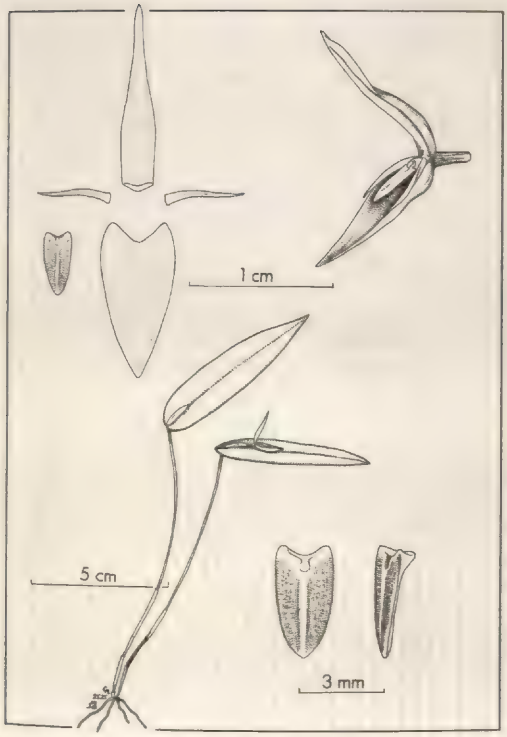


Fig. 130. Acronia microcardia *subsp.* microcardia

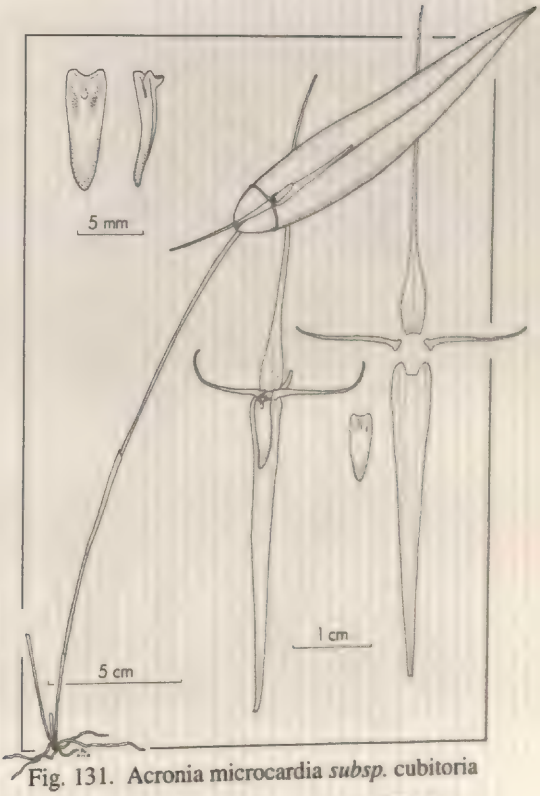


Fig. 131. Acronia microcardia *subsp.* cubitoria

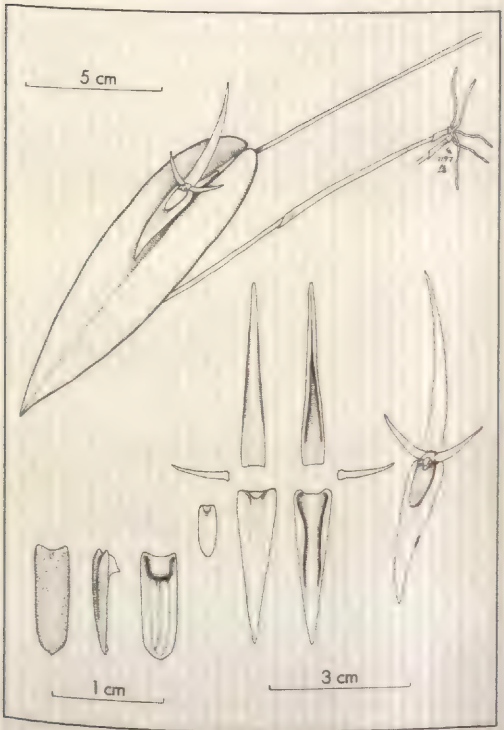


Fig. 132. Acronia microcardia *subsp.* tamaënsis

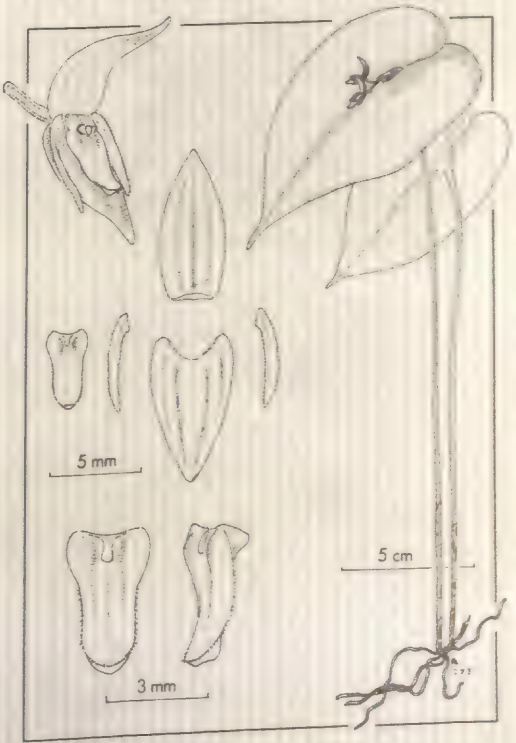


Fig. 133. Acronia millei

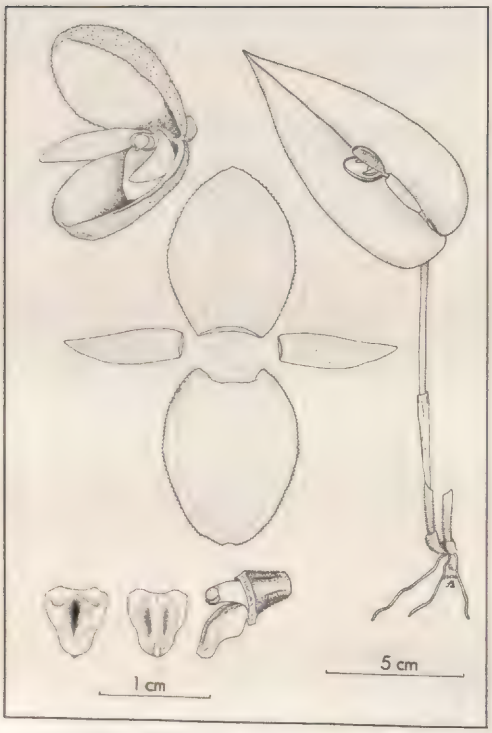


Fig. 134. Acronia muriculata

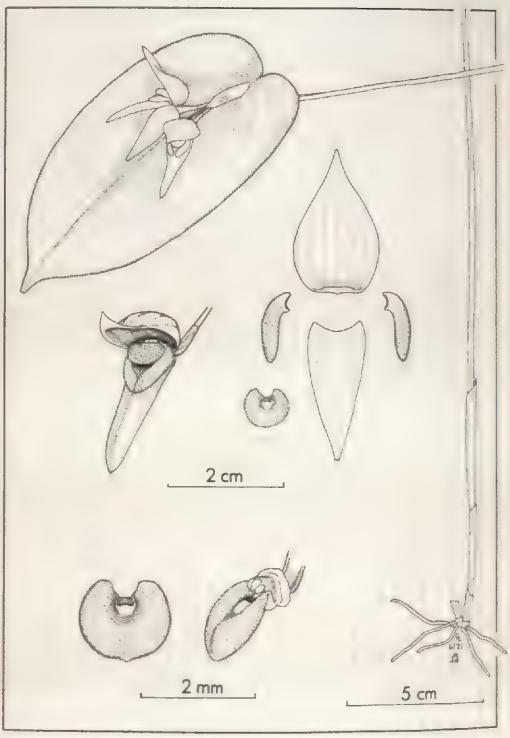


Fig. 135. Acronia nephroglossa

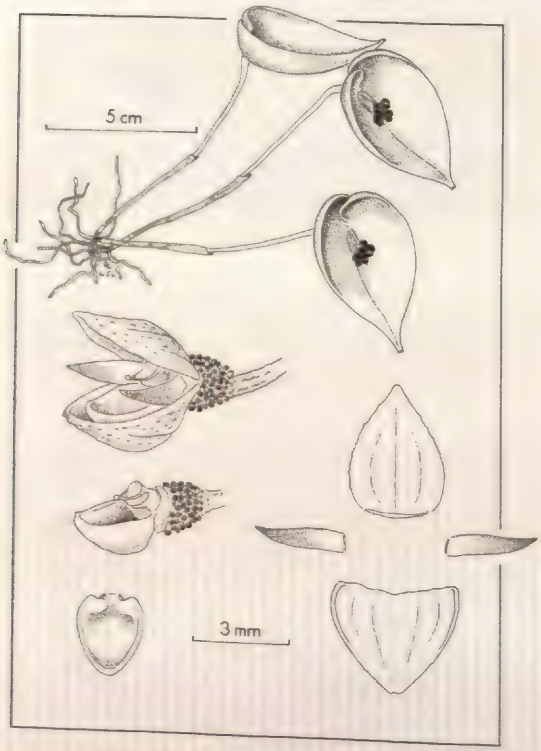


Fig. 136. Acronia nipterophylla

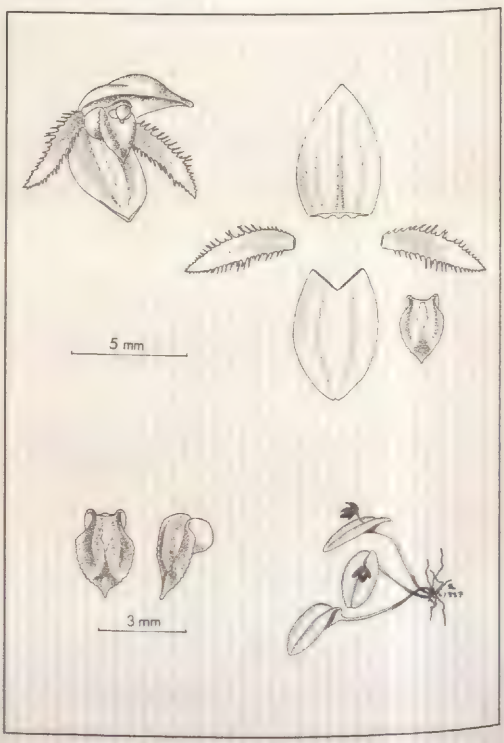


Fig. 137. Acronia nitida

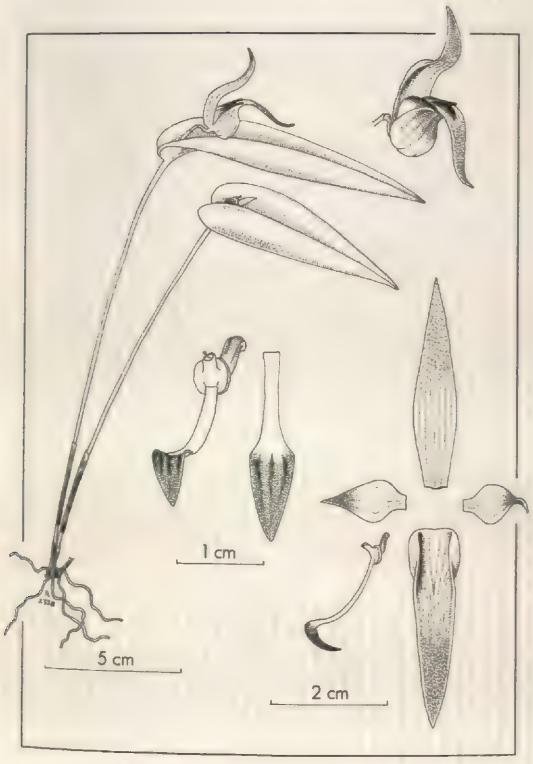


Fig. 138. Acronia nossax

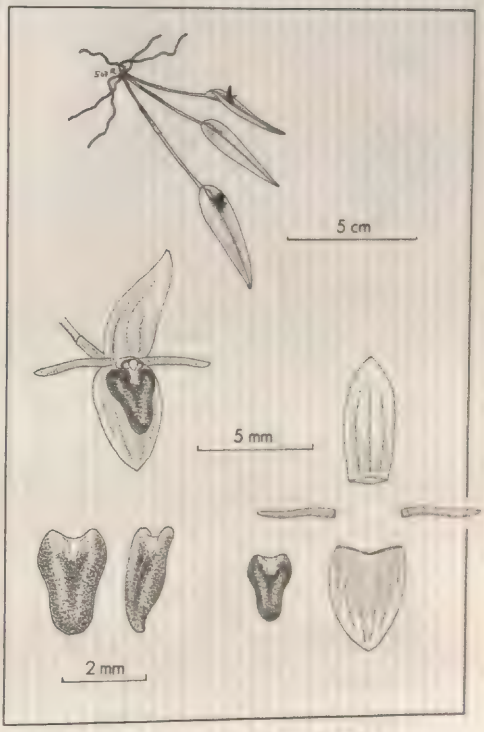


Fig. 139. Acronia obpyriformis

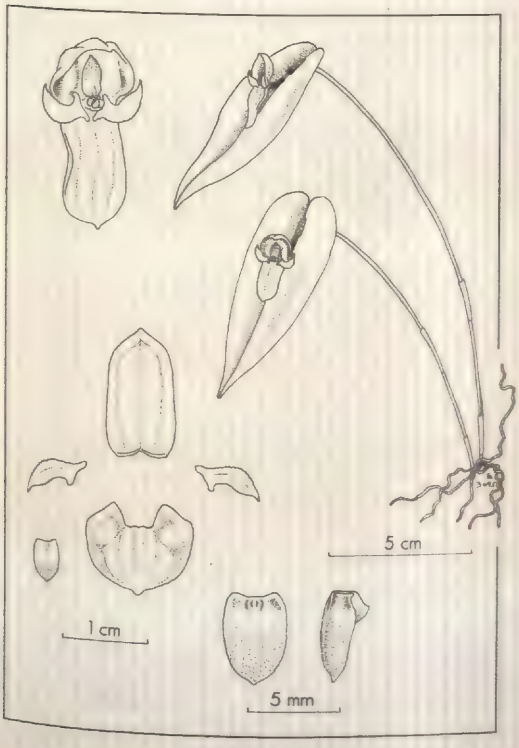


Fig. 140. Acronia octavioi

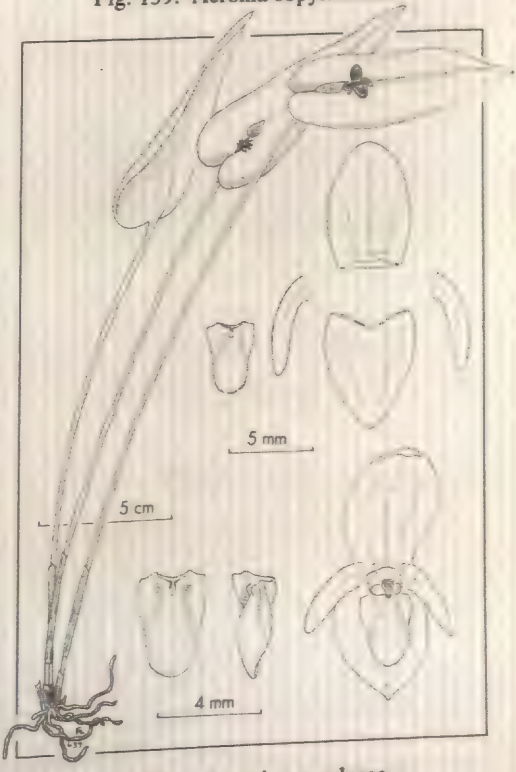


Fig. 141. Acronia omoglossa

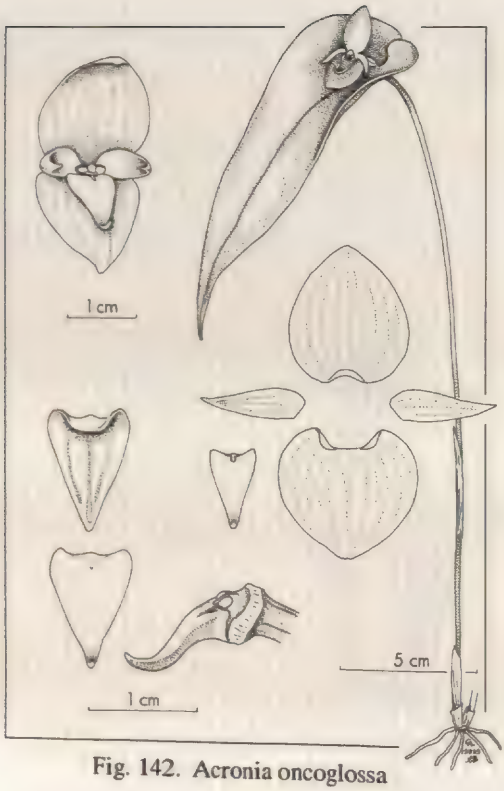


Fig. 142. Acronia oncoglossa

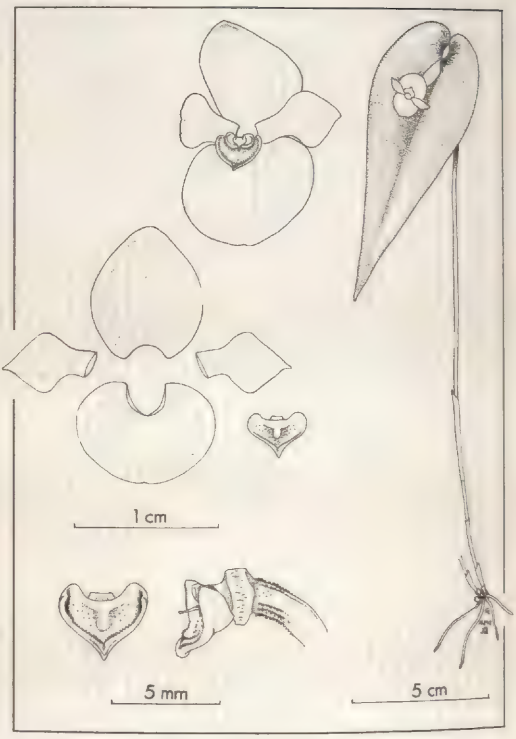


Fig. 143. Acronia ortegae

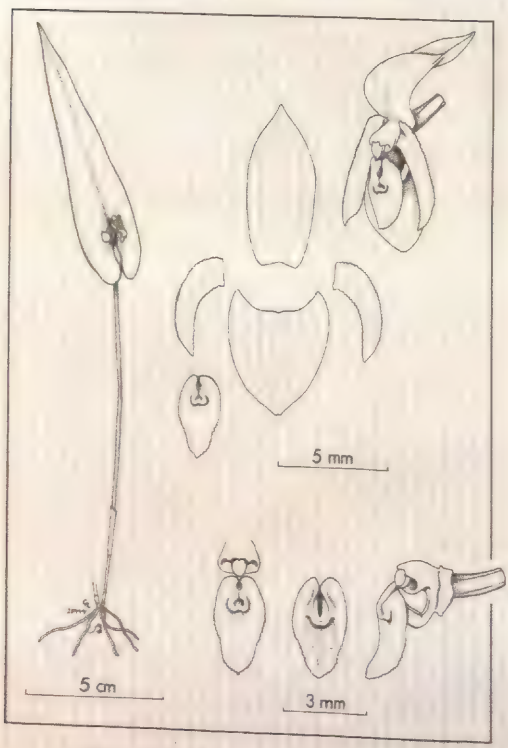


Fig. 144. Acronia orygmoglossa

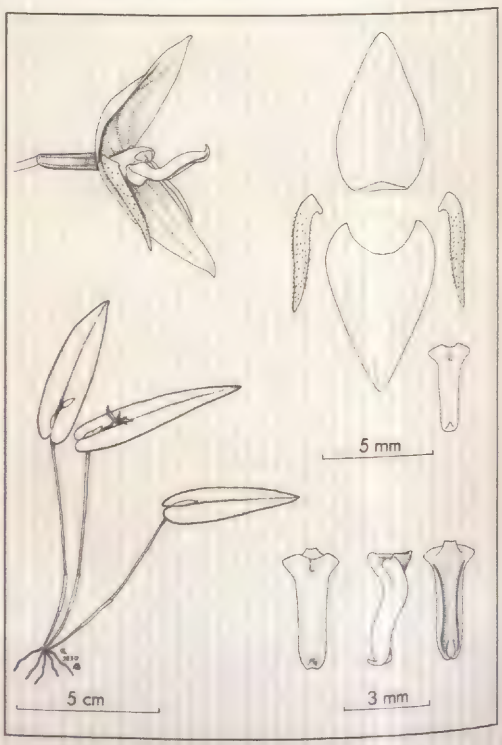


Fig. 145. Acronia oxapampae

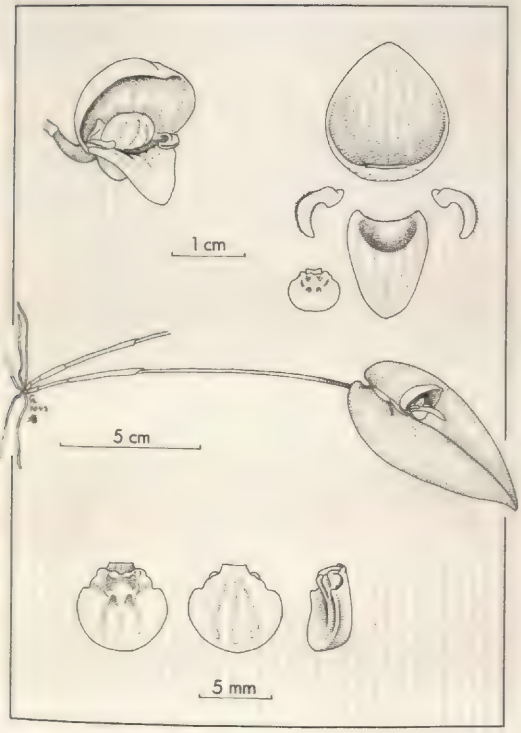


Fig. 146. Acronia palliolata

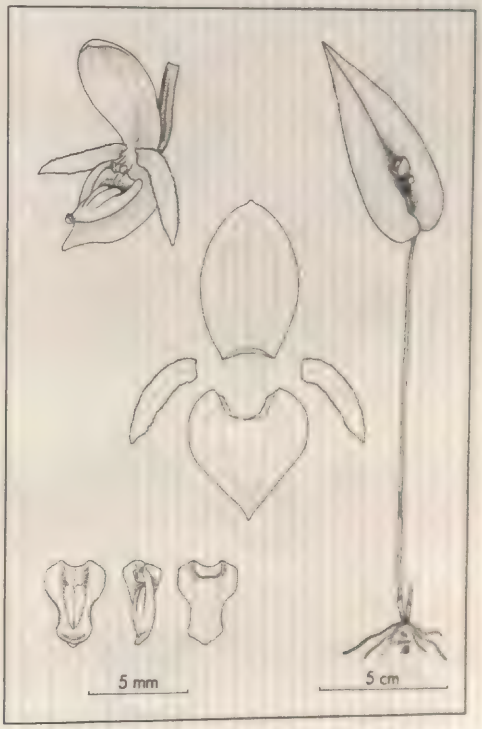


Fig. 147. Acronia pandurata

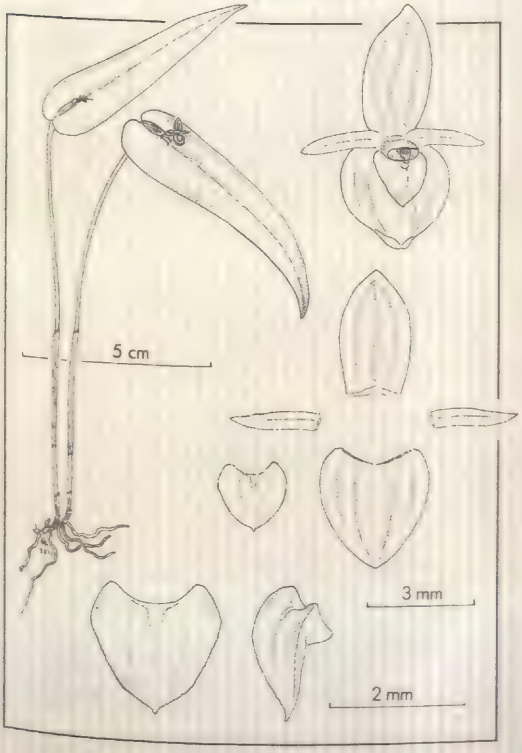


Fig. 148. Acronia pansamalae

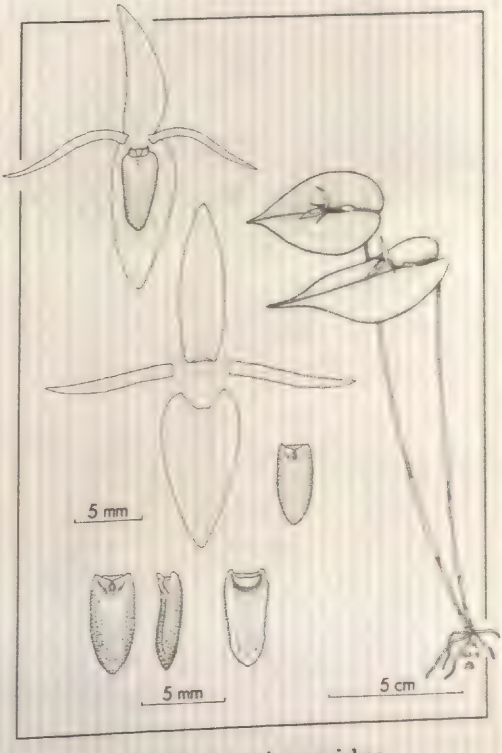


Fig. 149. Acronia paquishae

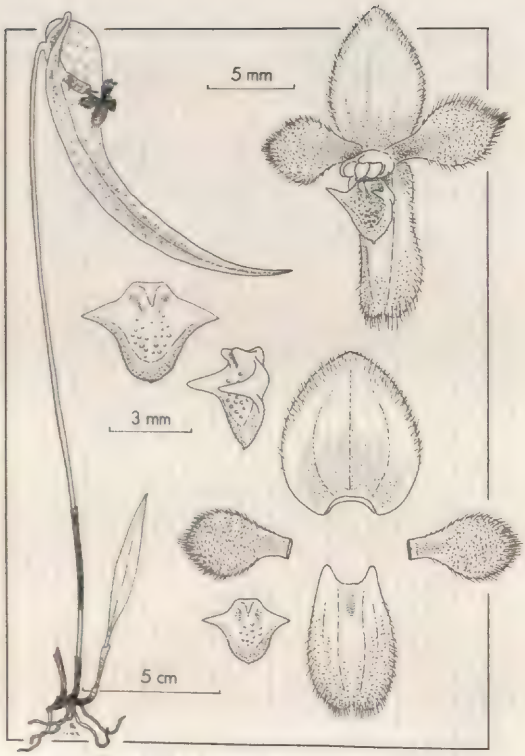


Fig. 150. Acronia peculiaris

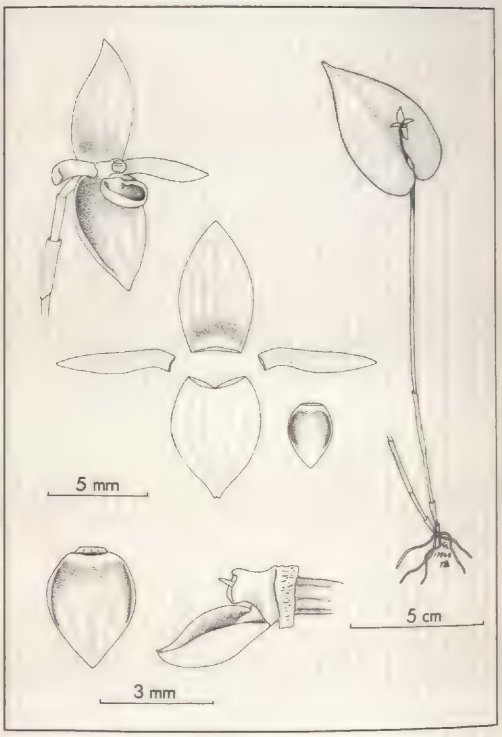


Fig. 151. Acronia pelicophora

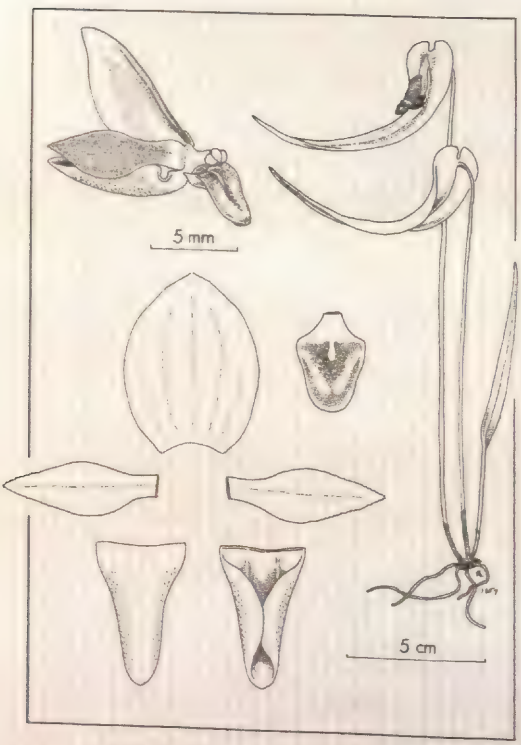


Fig. 152. Acronia penelops

Fig. 153. Acronia perijaënsis

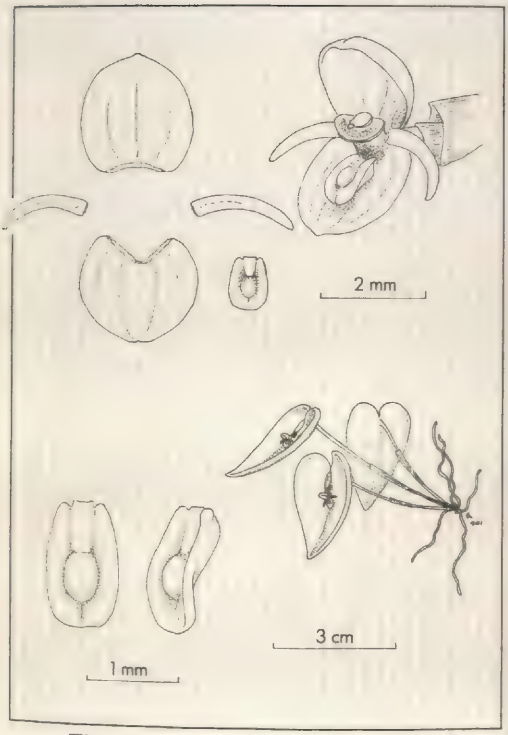


Fig. 154. Acronia peroniocephala

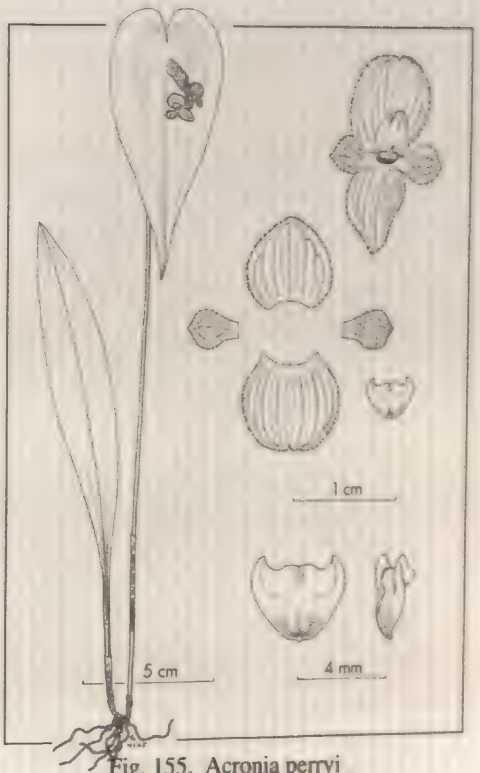


Fig. 155. Acronia perryi

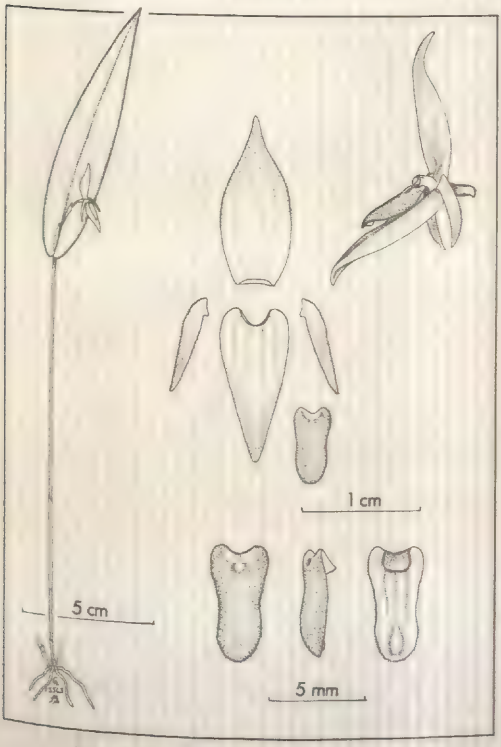


Fig. 156. Acronia persimilis

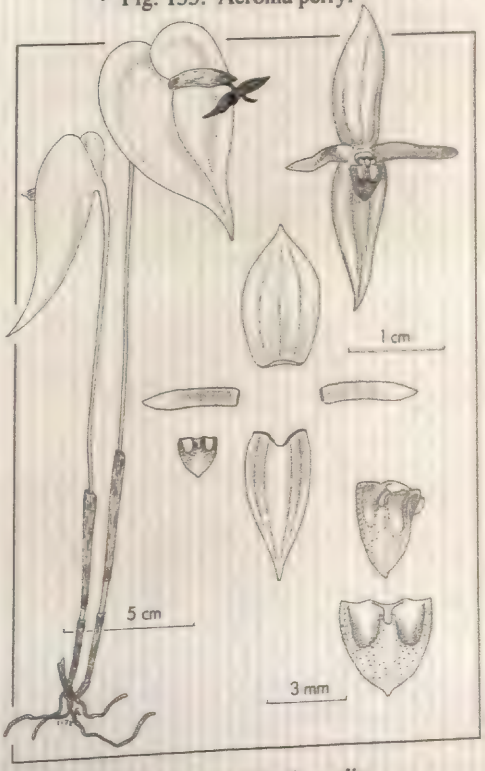


Fig. 157. Acronia phyllocardia

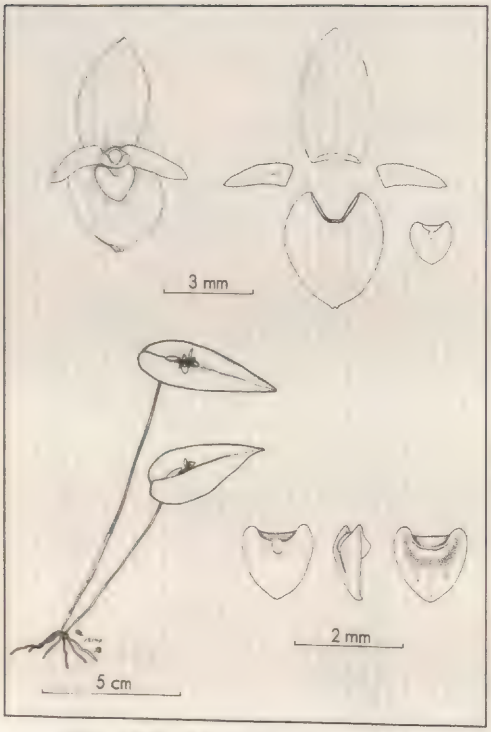


Fig. 158a. Acronia phyllocardioides

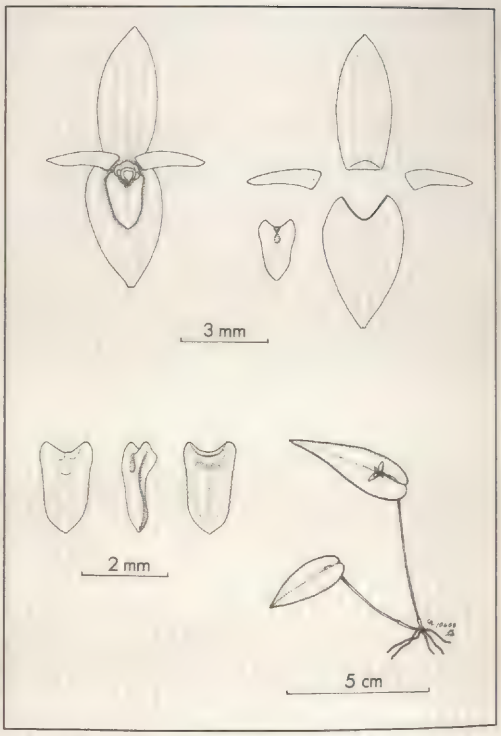


Fig. 158b. Acronia phyllocardioides (P. acostae)

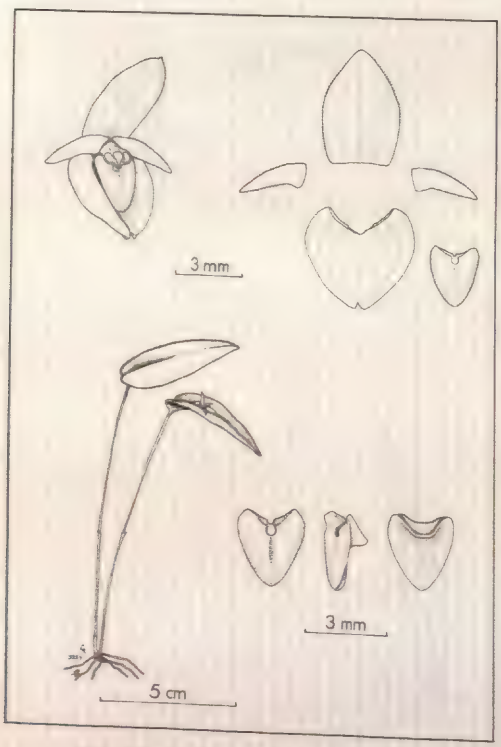


Fig. 158c. Acronia phyllocardioides (P. graciliscapa)

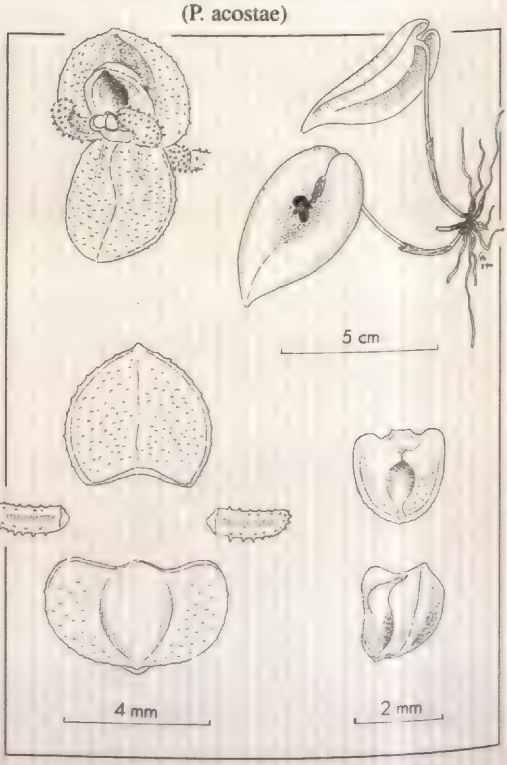


Fig. 159. Acronia phymatodea

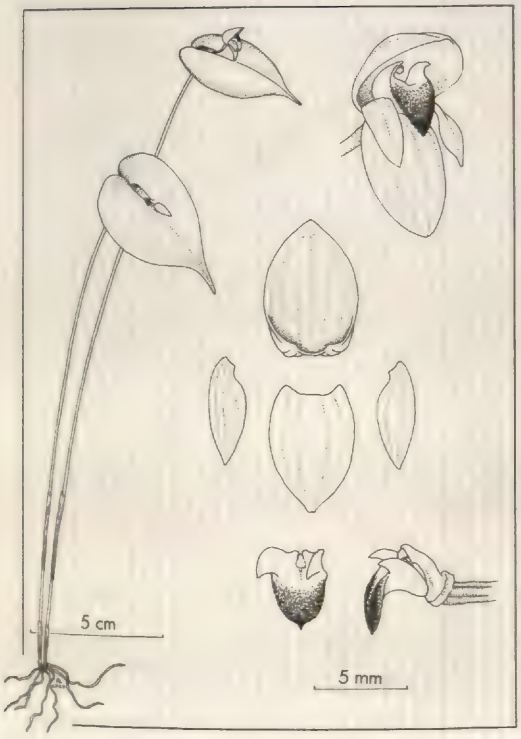


Fig. 160. Acronia pileata

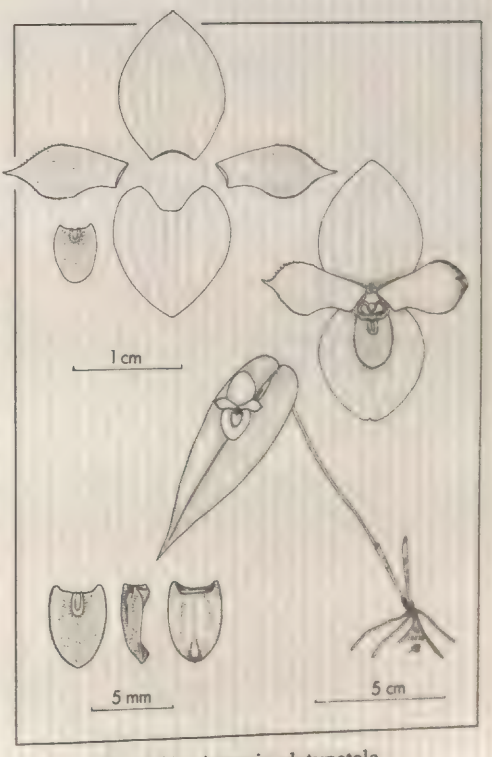


Fig. 161. Acronia platypetala

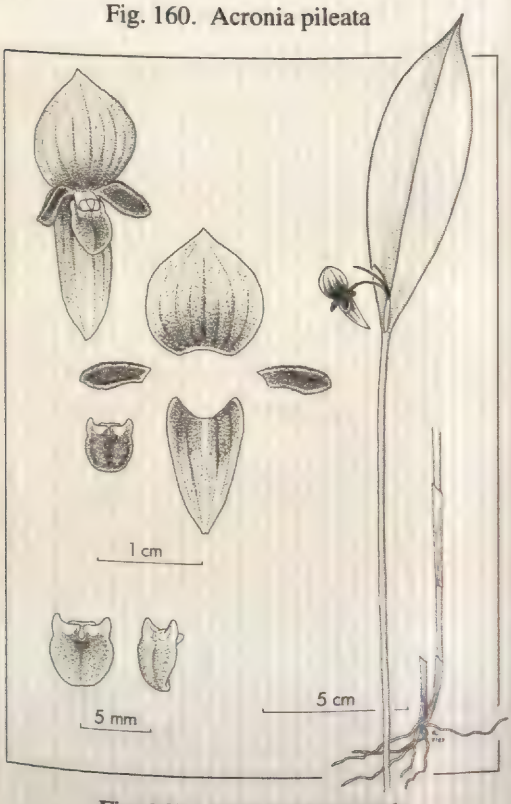


Fig. 162. Acronia platysepala

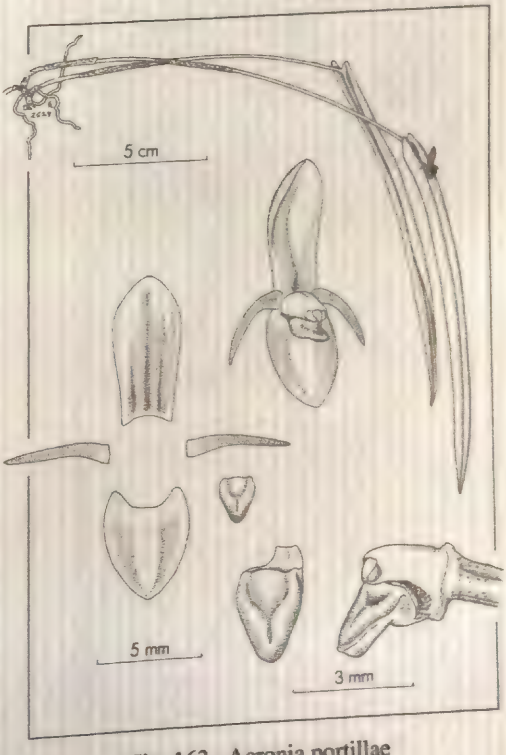


Fig. 163. Acronia portillae

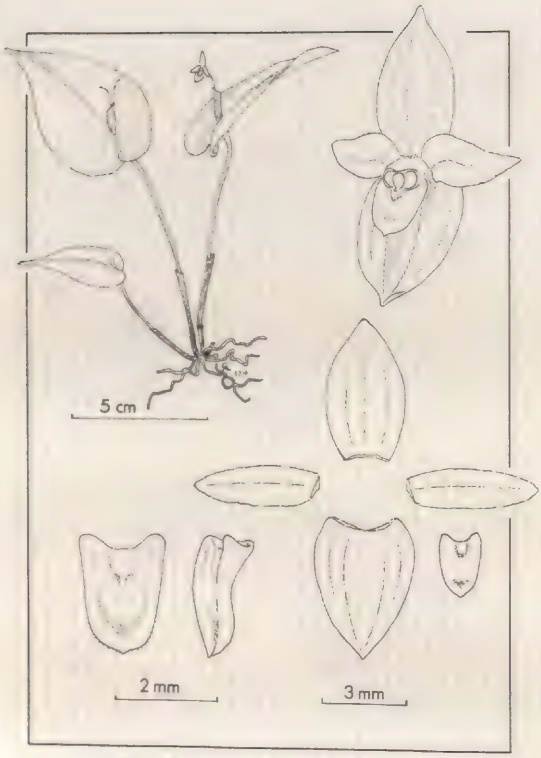


Fig. 164. Acronia prolaticollaris

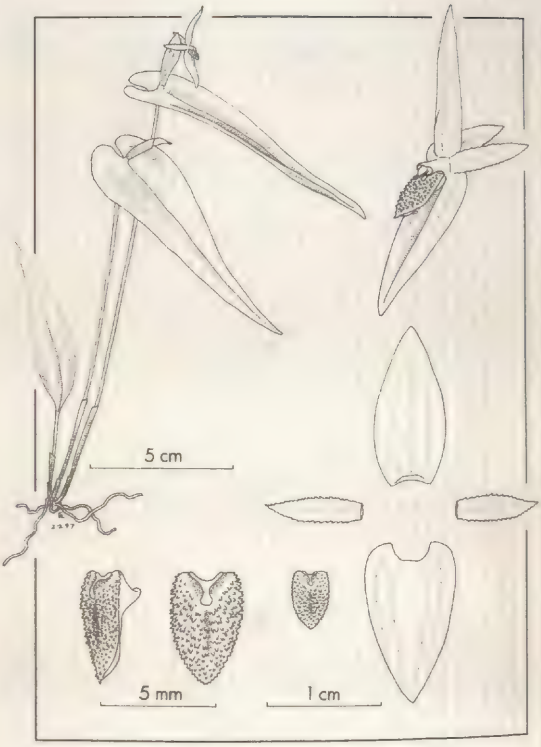


Fig. 165. Acronia radula

Fig. 166. Acronia rectipetala

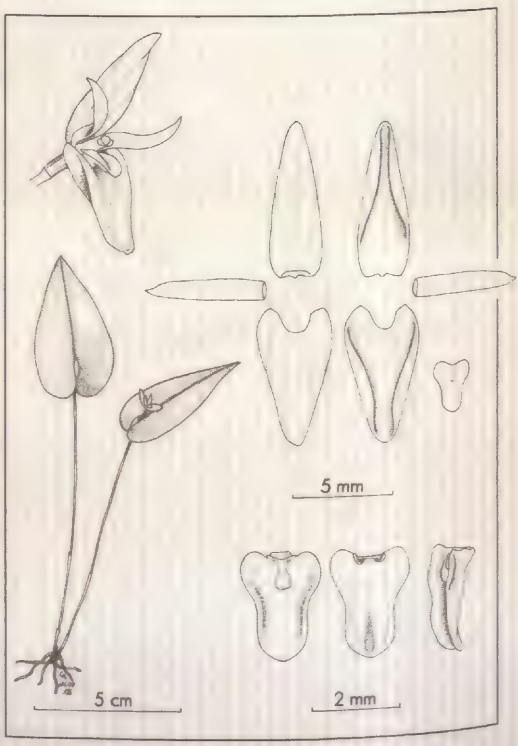


Fig. 167. Acronia recurvata

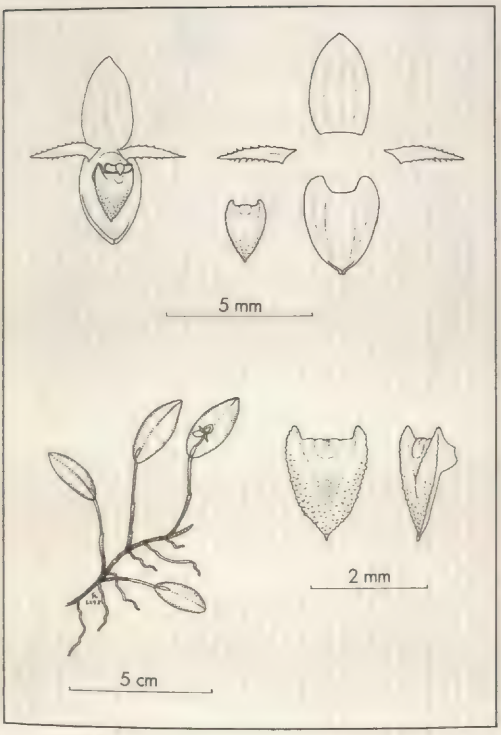


Fig. 168. Acronia reptans

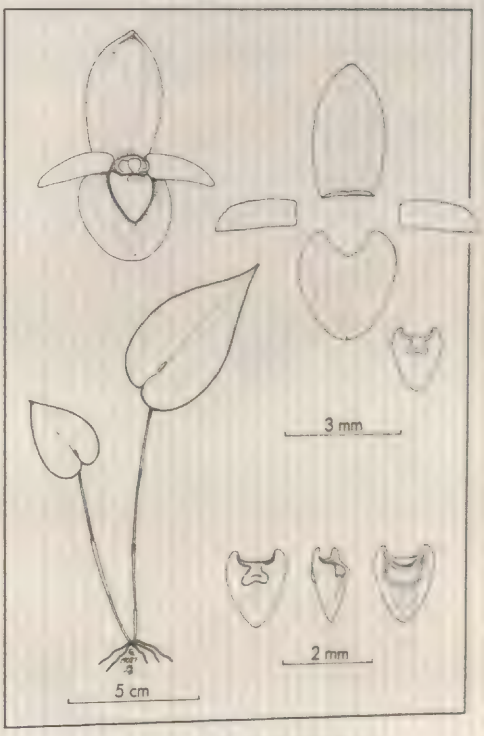


Fig. 169a. Acronia rhodoglossa

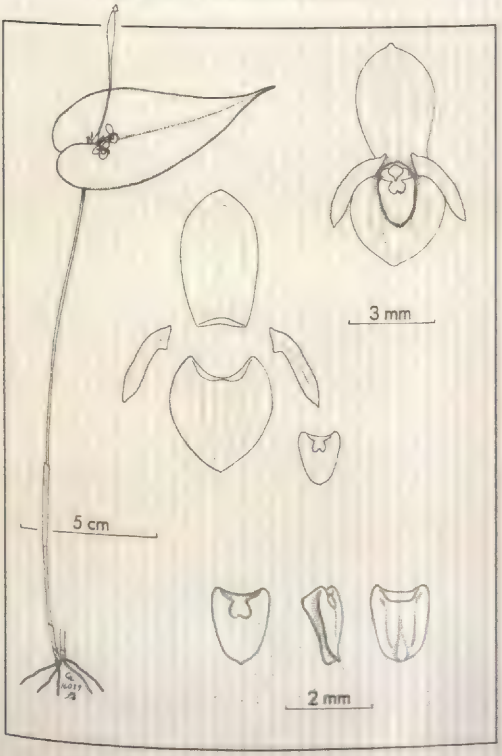


Fig. 169b. Acronia rhodoglossa

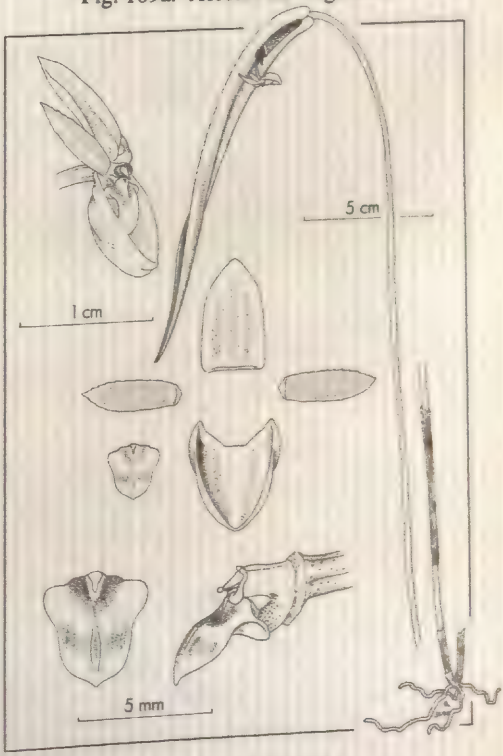


Fig. 170. Acronia ripleyi

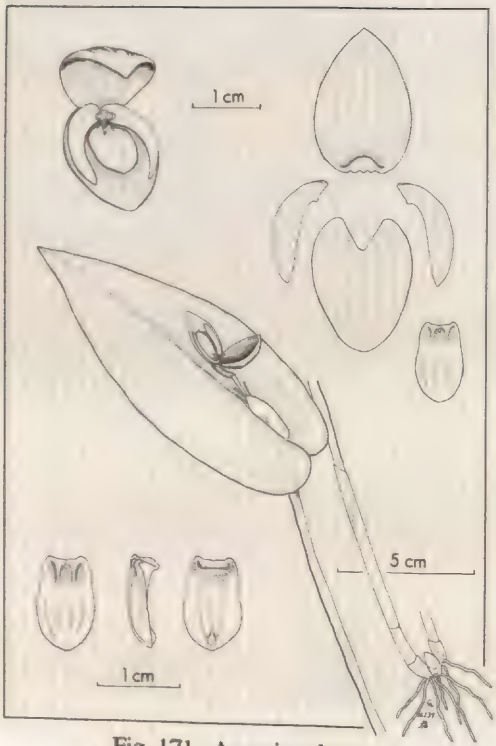


Fig. 171. Acronia robusta

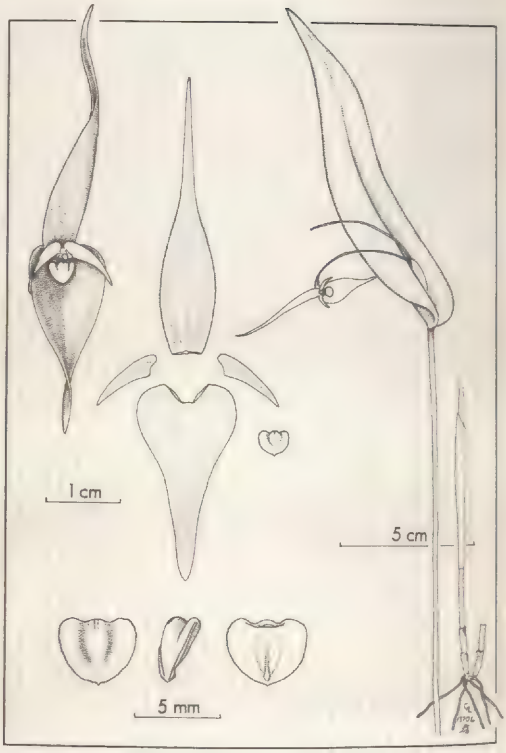


Fig. 172a. Acronia ruberrima

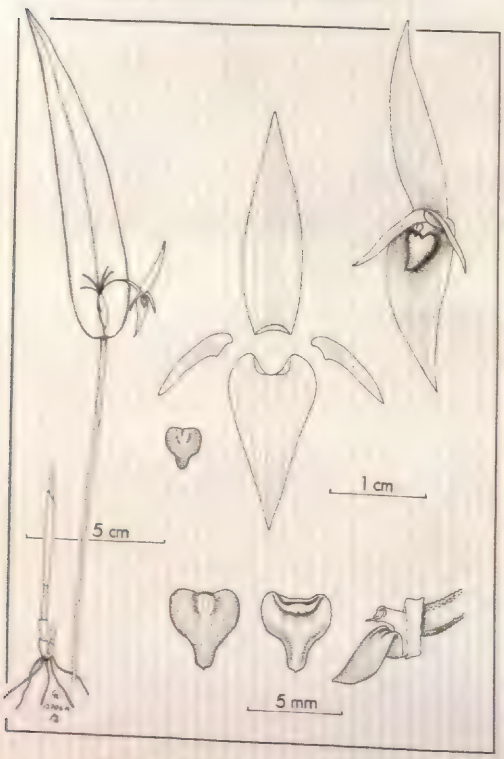


Fig. 172b. Acronia ruberrima

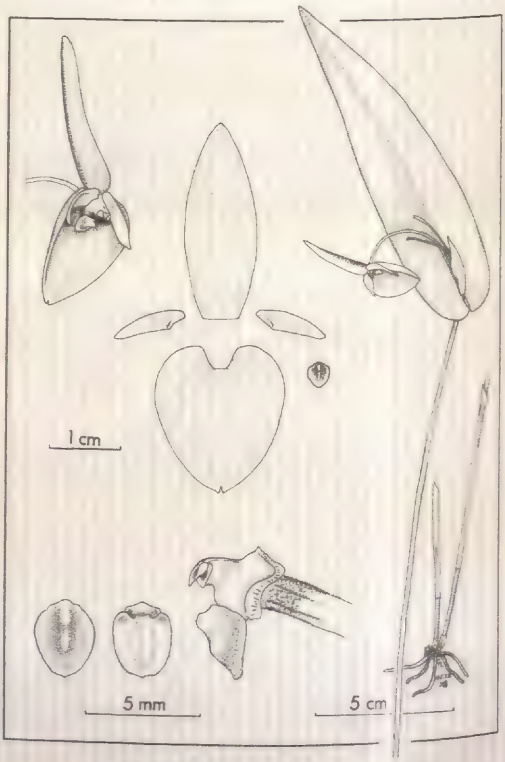


Fig. 172c. Acronia ruberrima

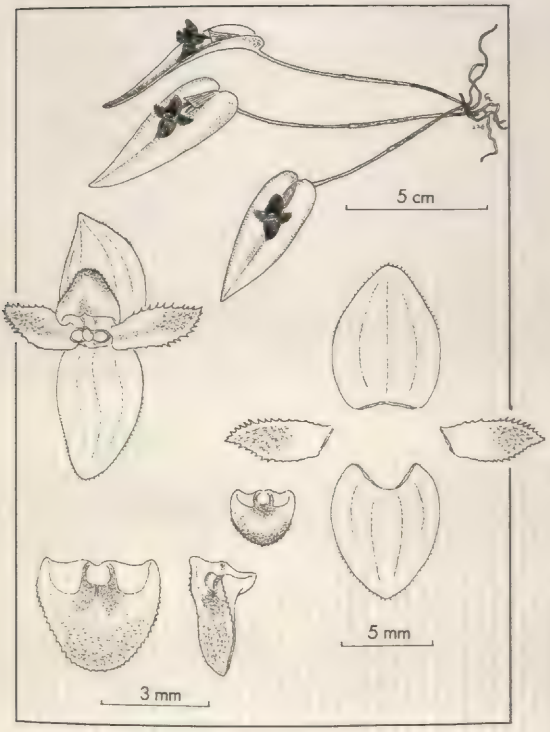


Fig. 173. Acronia rubroinversa

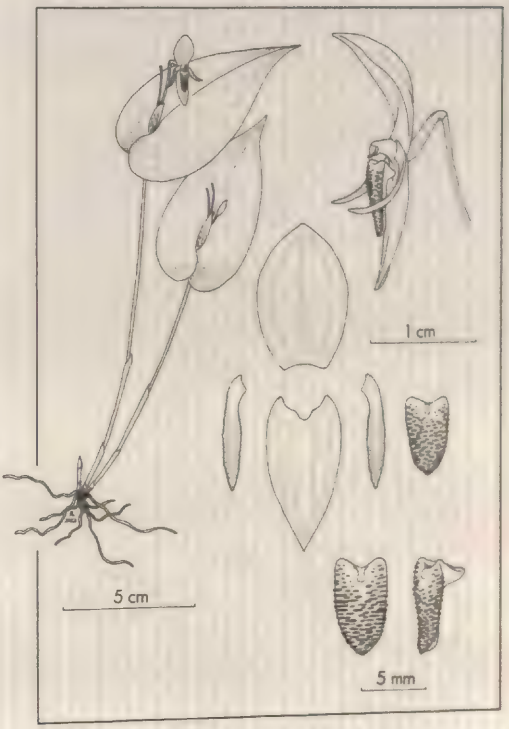


Fig. 174. Acronia rugosa

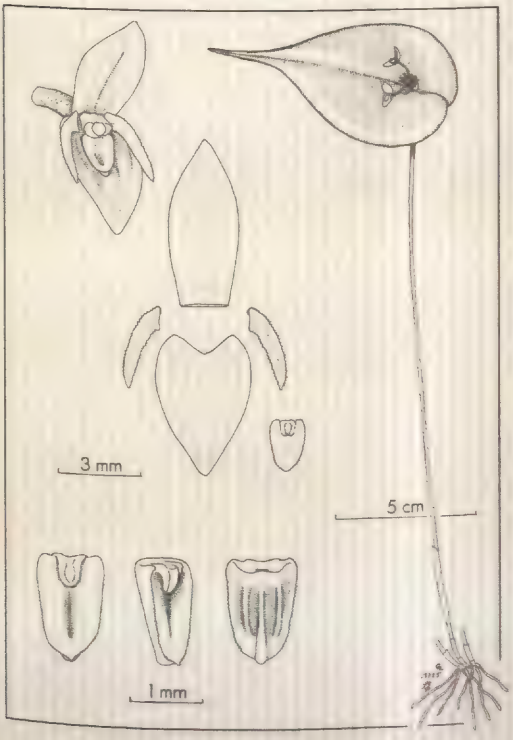


Fig. 175. Acronia rutrifolia

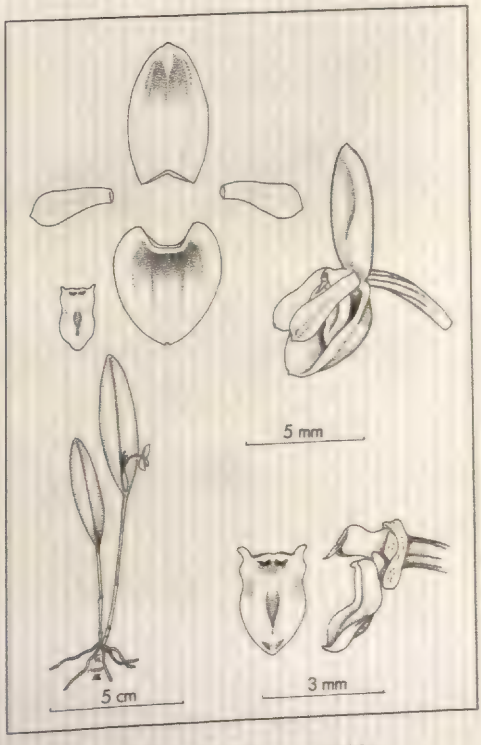


Fig. 176. Acronia saccatilabia

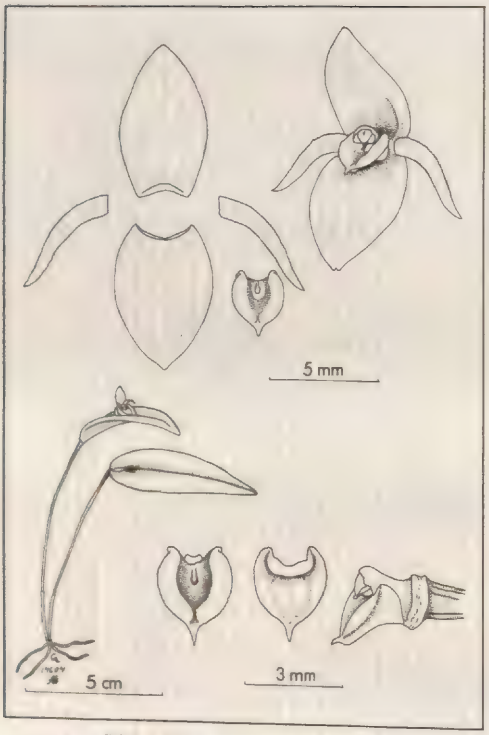


Fig. 177a. Acronia sanchoi

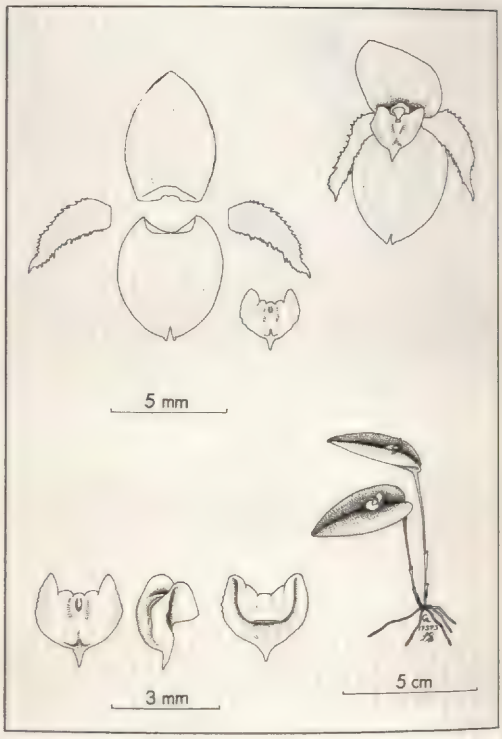


Fig. 177b. Acronia sanchoi

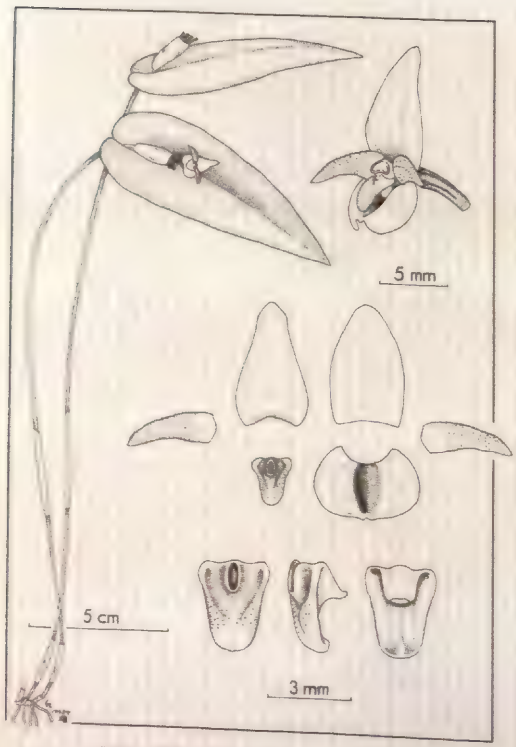


Fig. 178. Acronia sannio

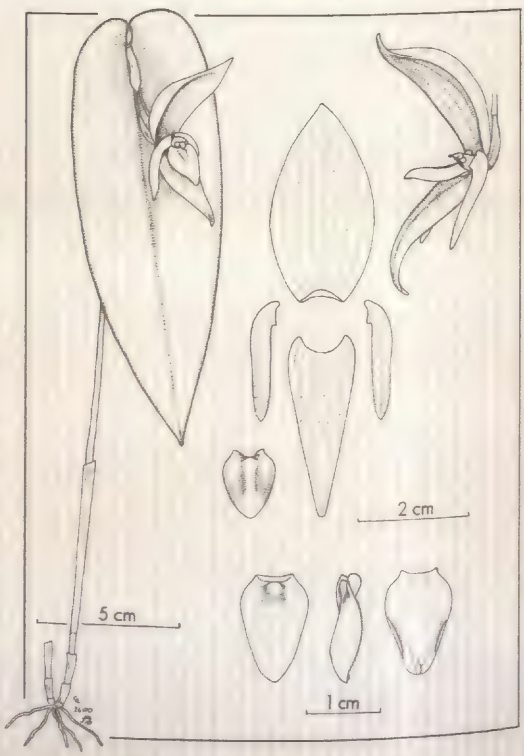


Fig. 179. Acronia sarcochila

Fig. 180. Acronia scabrilinguis

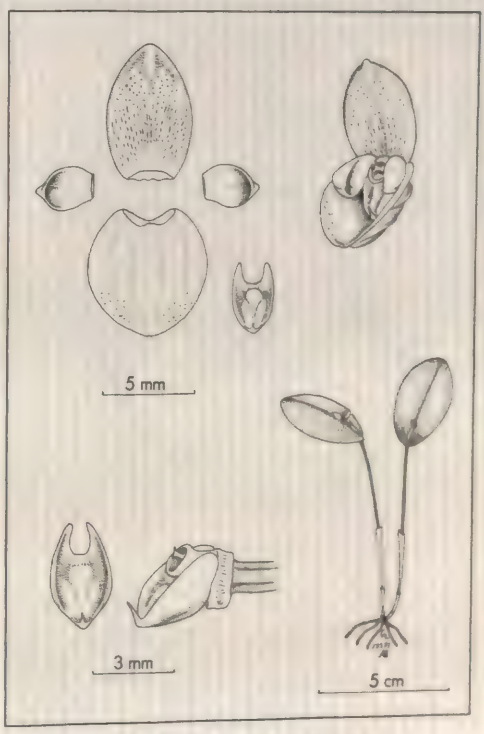


Fig. 181. Acronia scaphipetala

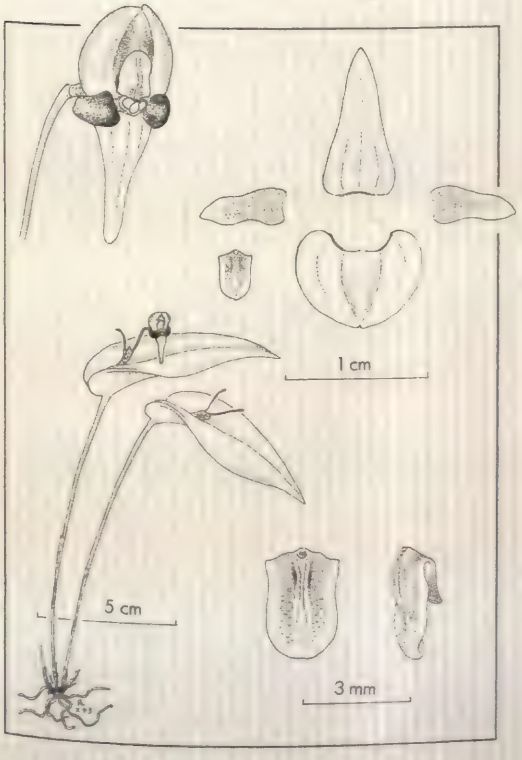


Fig. 182. Acronia scurrula

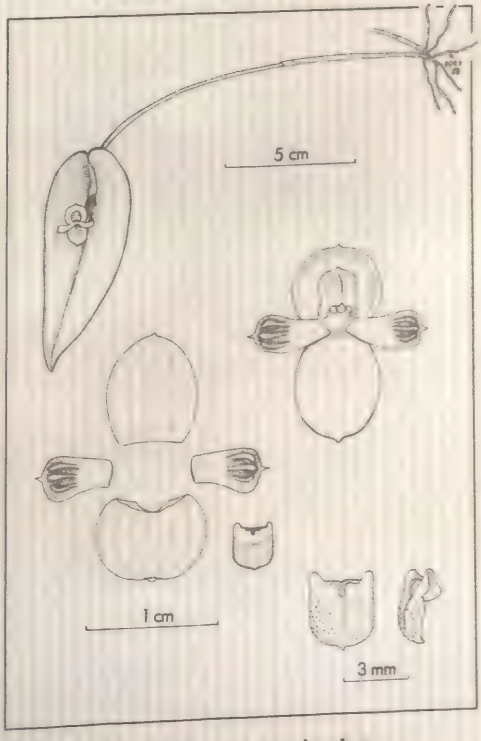


Fig. 183. Acronia semiscabra

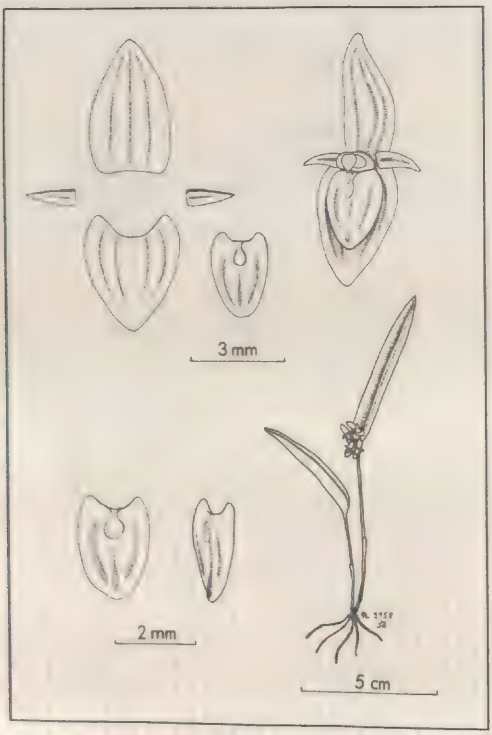


Fig. 184. Acronia sergioi

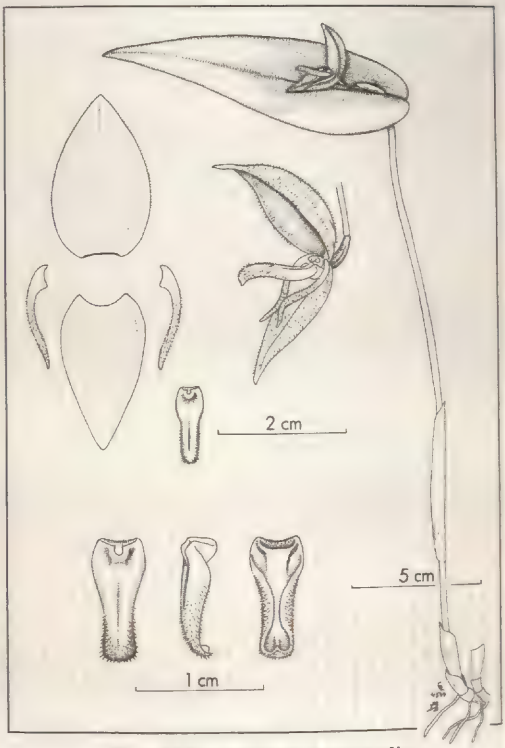


Fig. 185. Acronia serricardia

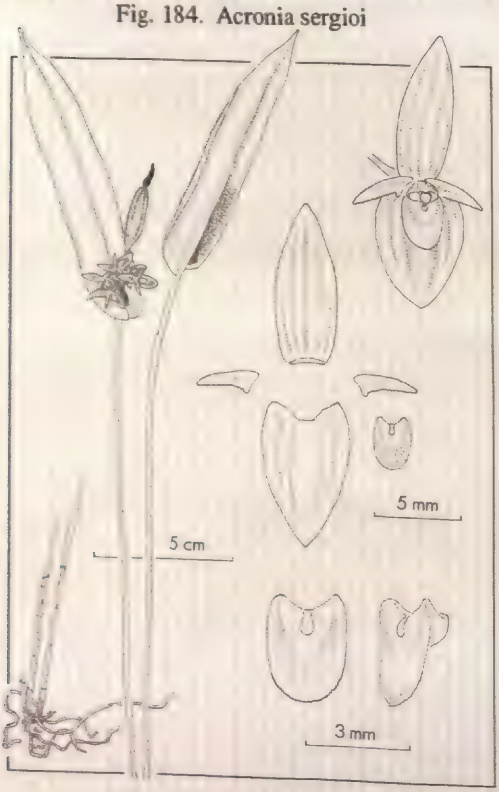


Fig. 186. Acronia sigynes

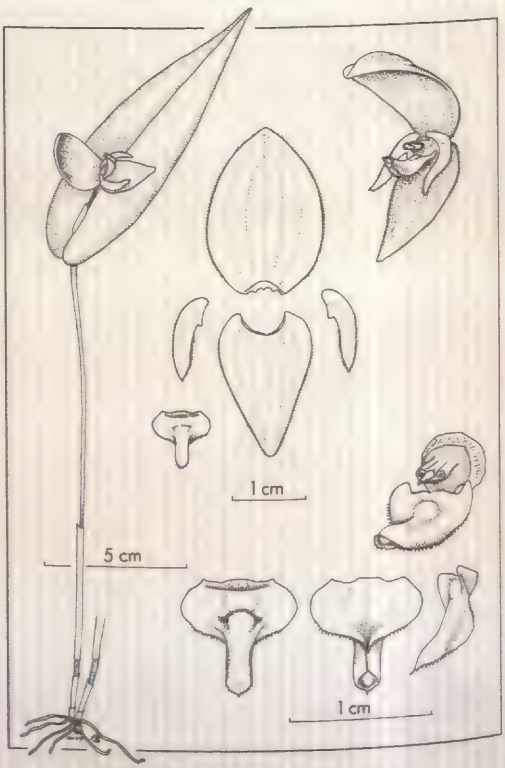


Fig. 187. Acronia siphoglossa

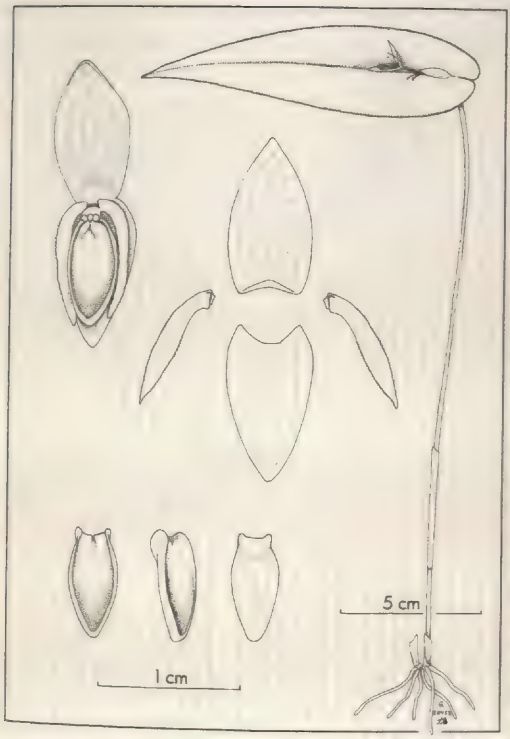


Fig. 188. Acronia solomonii

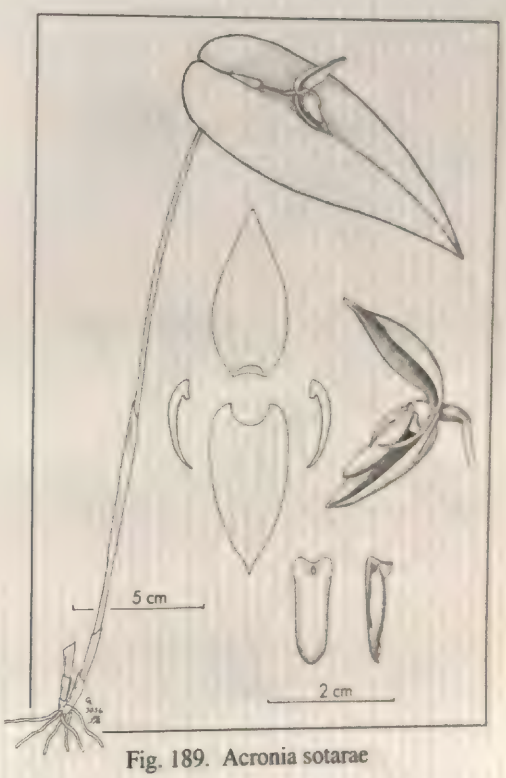


Fig. 189. Acronia sotarae

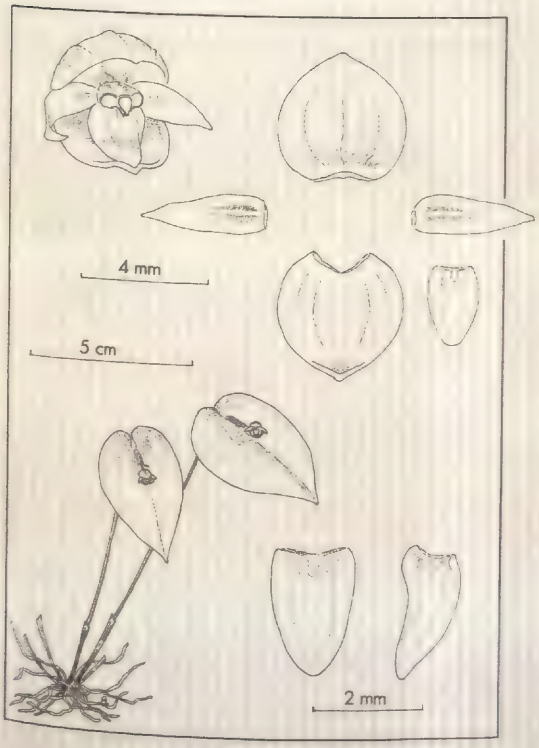


Fig. 190. Acronia sphaerantha

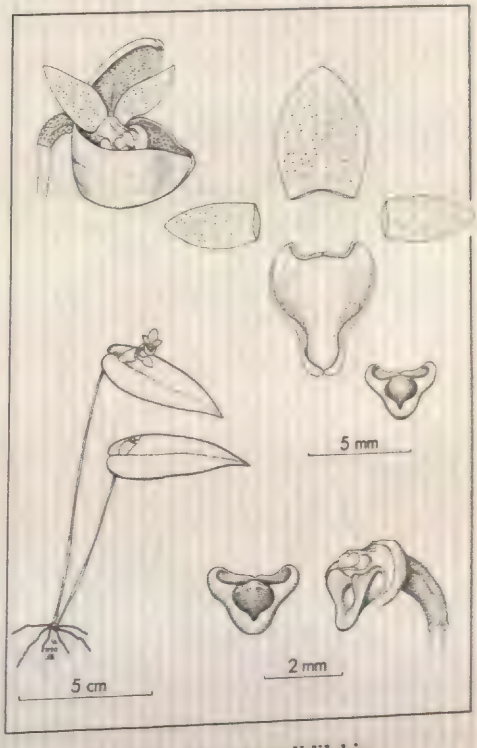


Fig. 191. Acronia stelidilabia

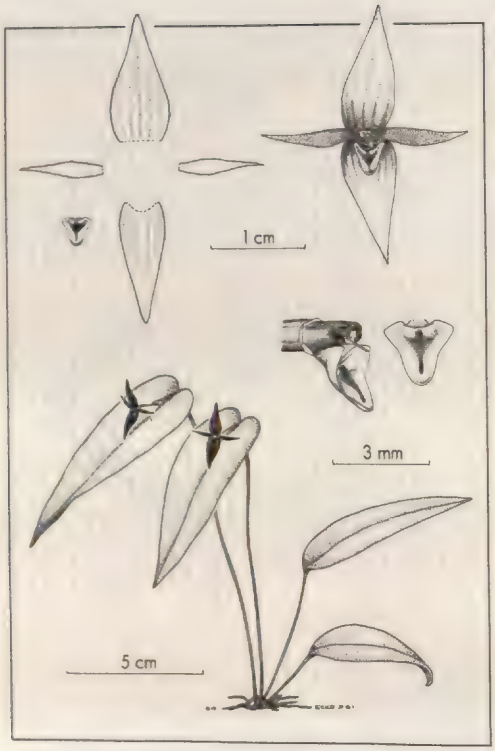


Fig. 192. Acronia stellata

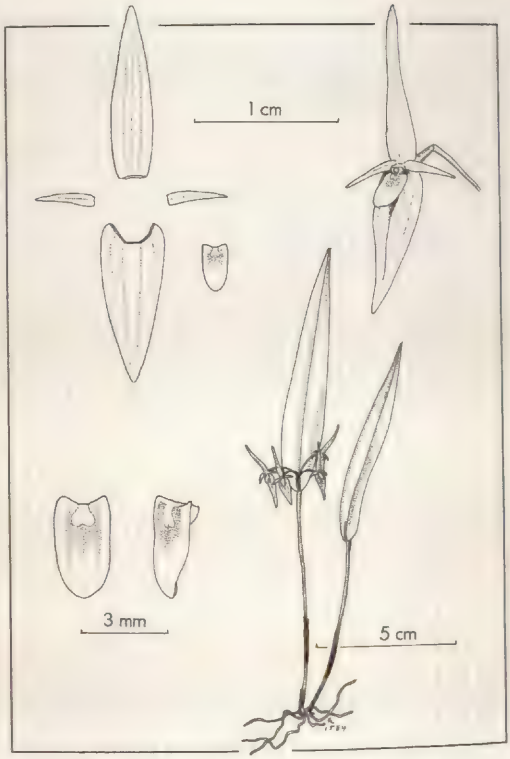


Fig. 193. Acronia stenota

Fig. 194. Acronia subtilis

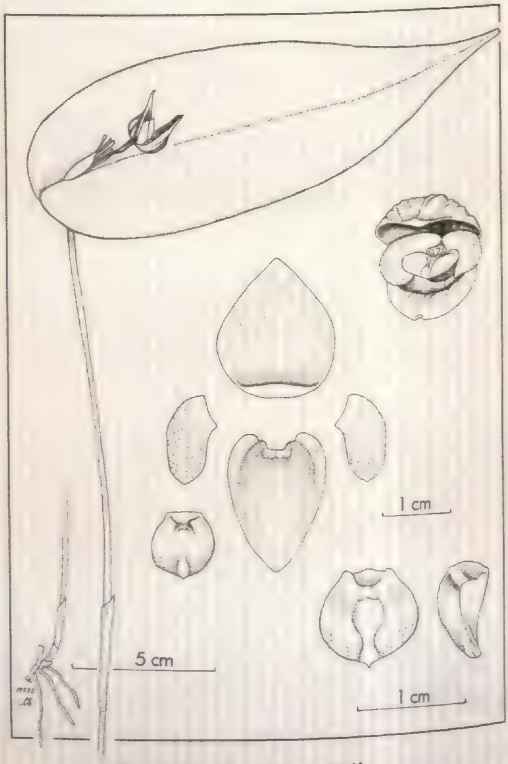


Fig. 195. Acronia suinii

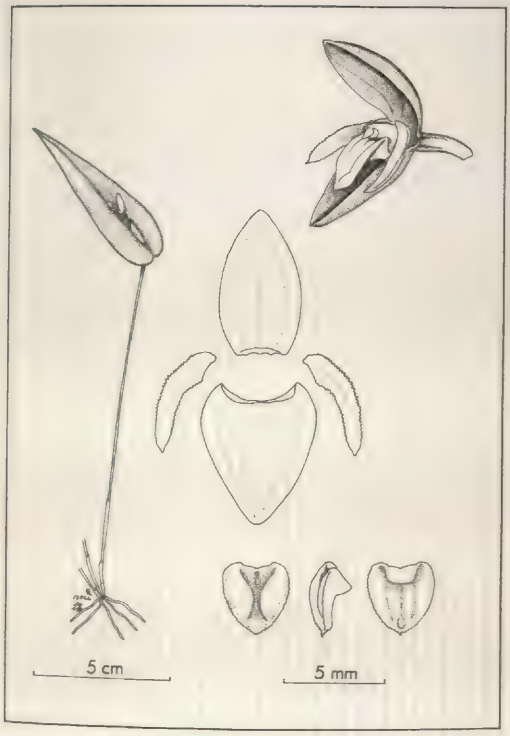


Fig. 196. Acronia tandapiënsis

Fig. 197. Acronia teaguei

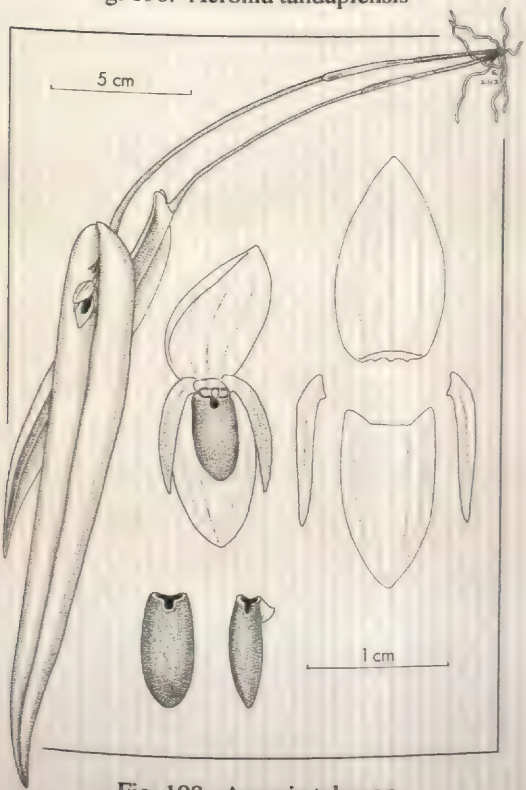


Fig. 198. Acronia telemon

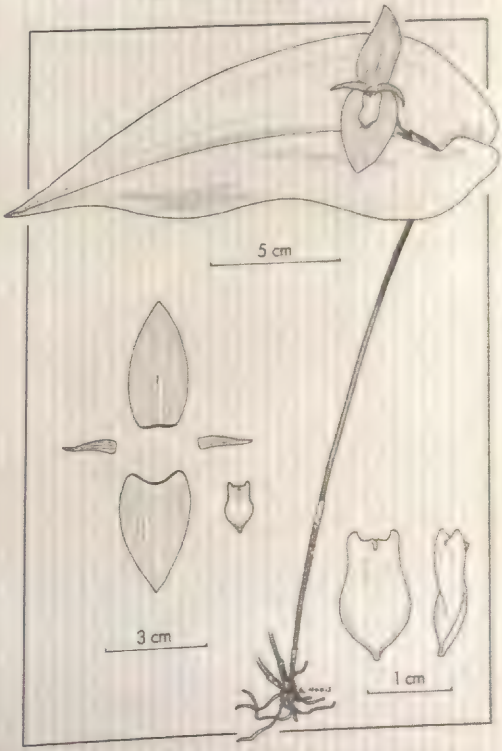


Fig. 199. Acronia titan

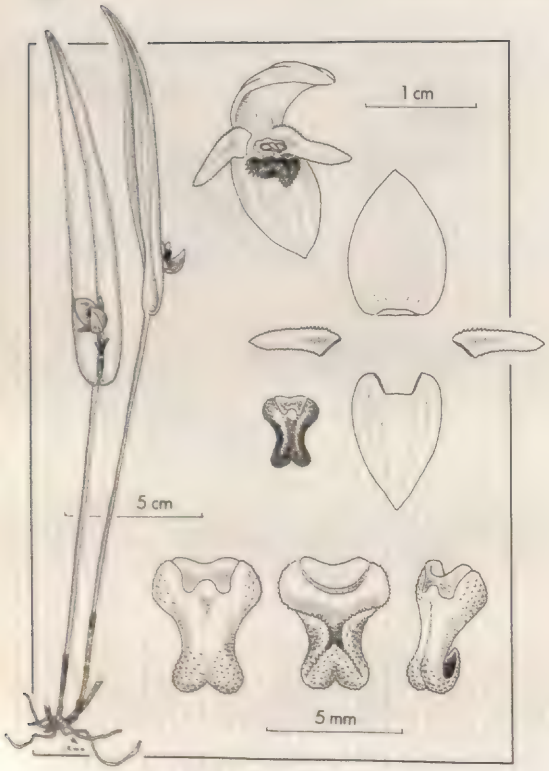


Fig. 200. Acronia tonduzii

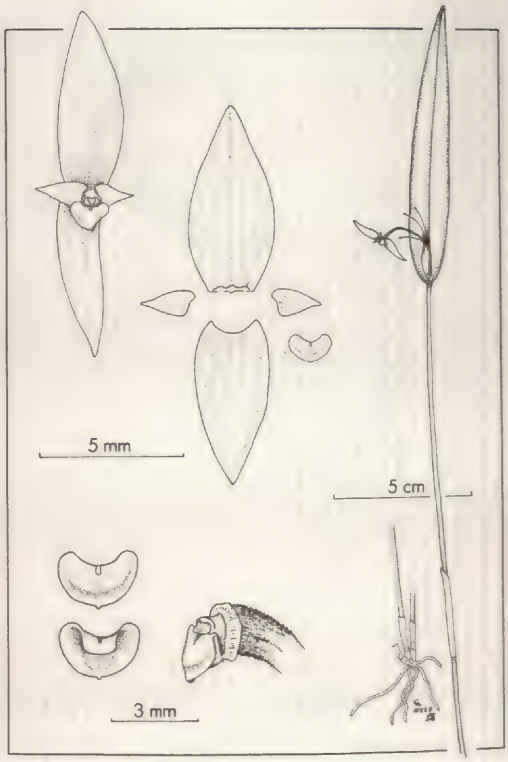


Fig. 201. Acronia tragulosa

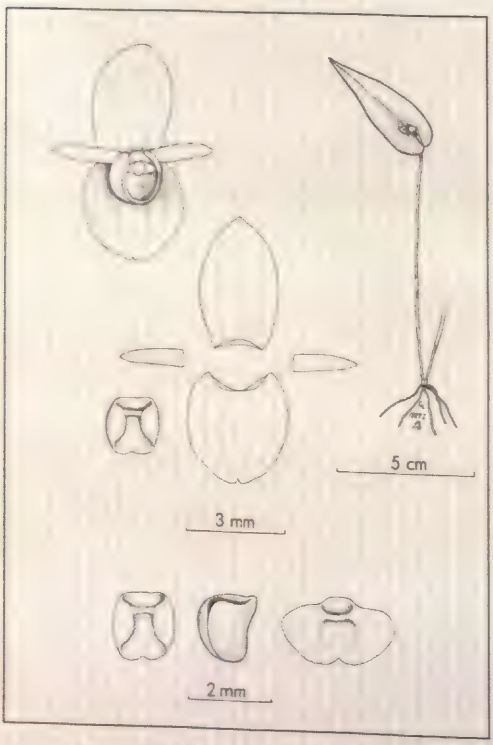


Fig. 202. Acronia transversilabia

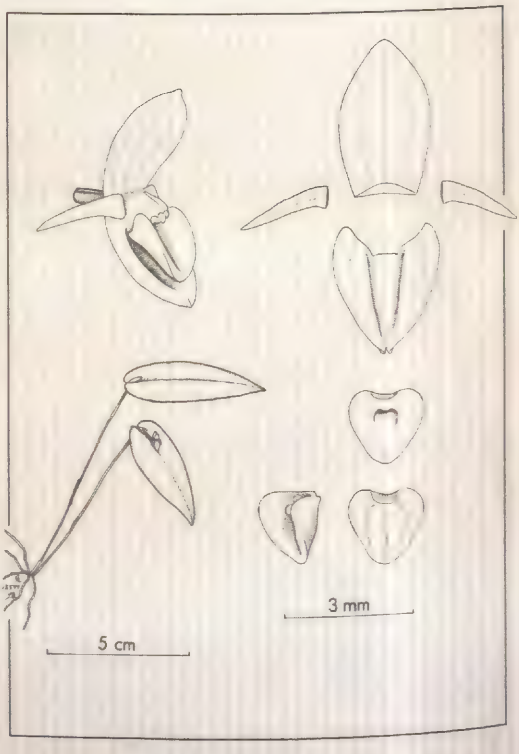


Fig. 203a. Acronia tridentata

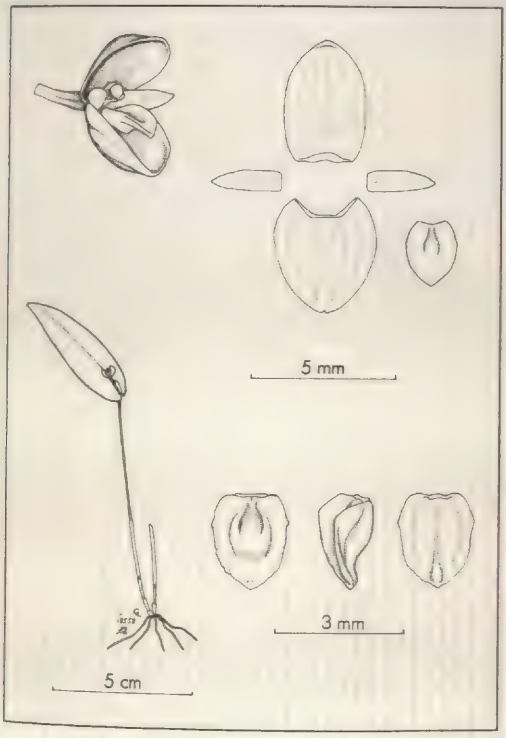


Fig. 203b. Acronia tridentata

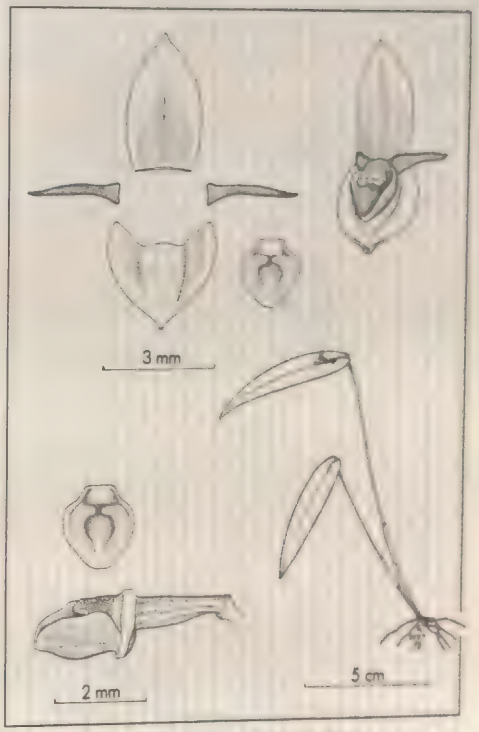


Fig. 203c. Acronia tridentata (P. ionantha)

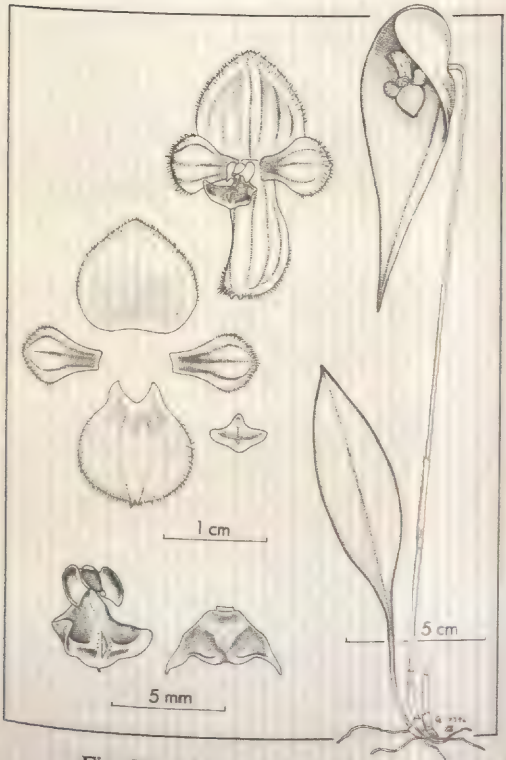


Fig. 204. Acronia troglodytes

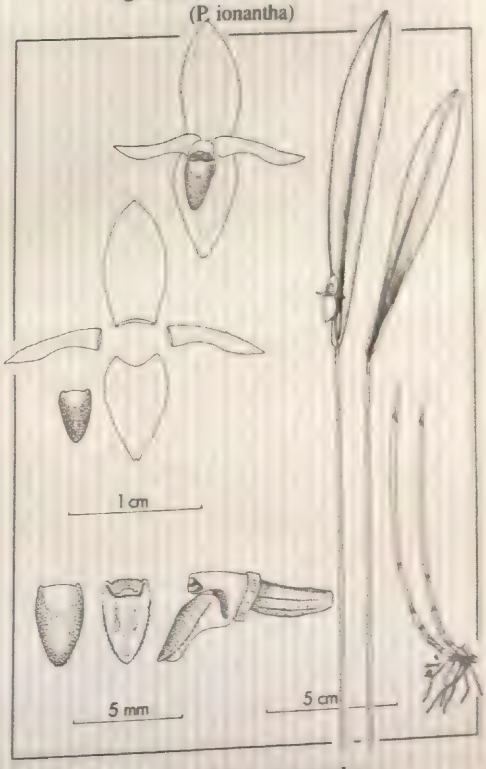
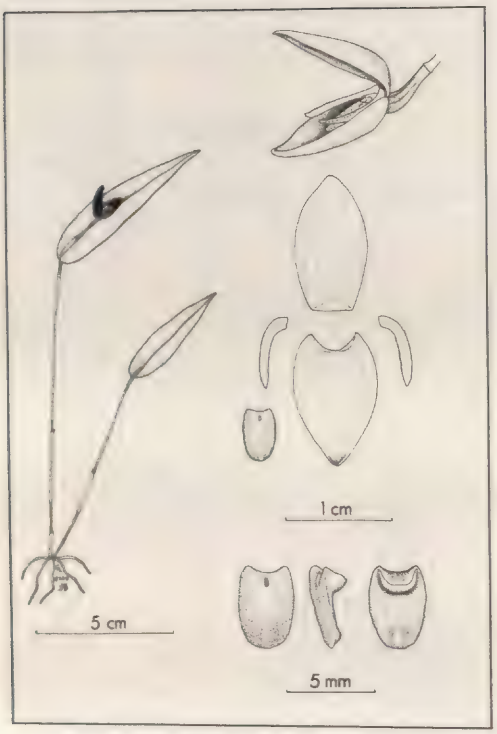


Fig. 205. Acronia tuberculosa



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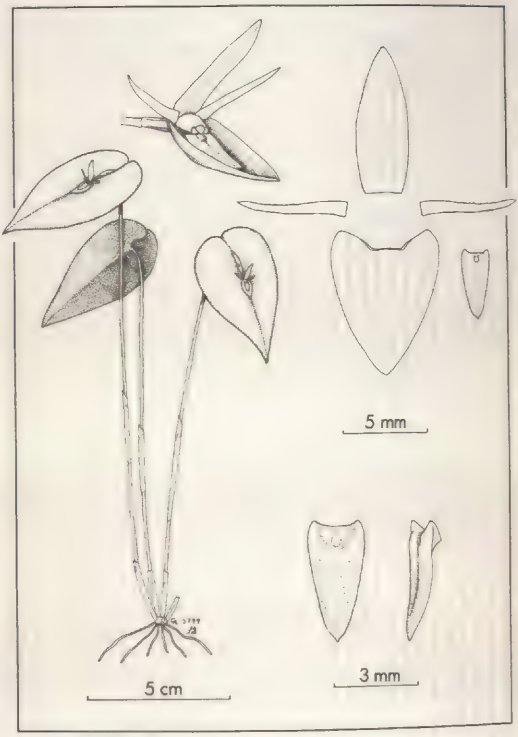

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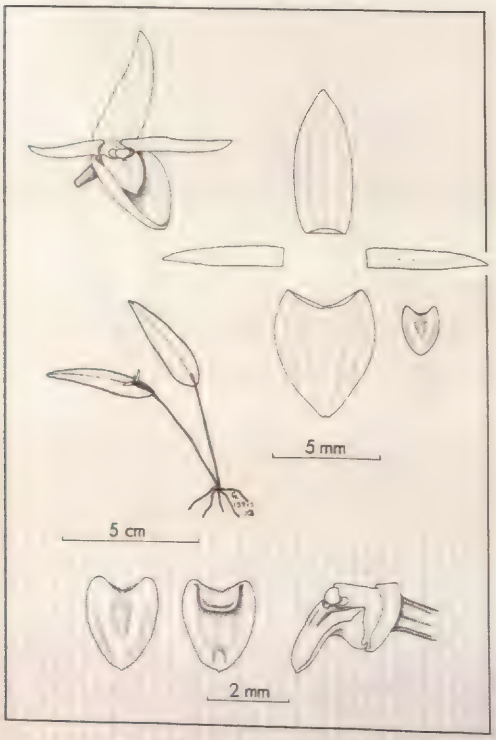

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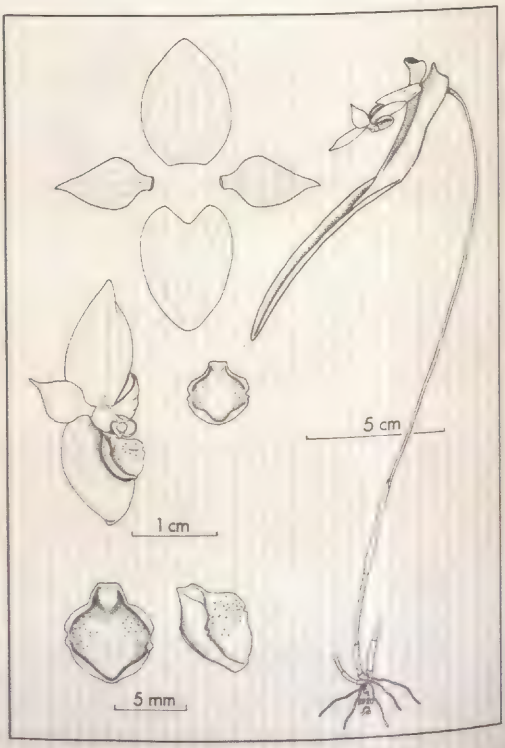

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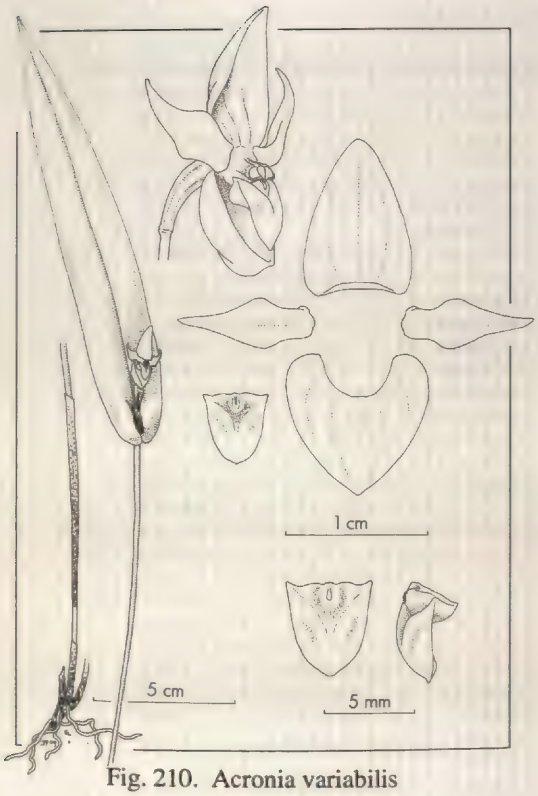

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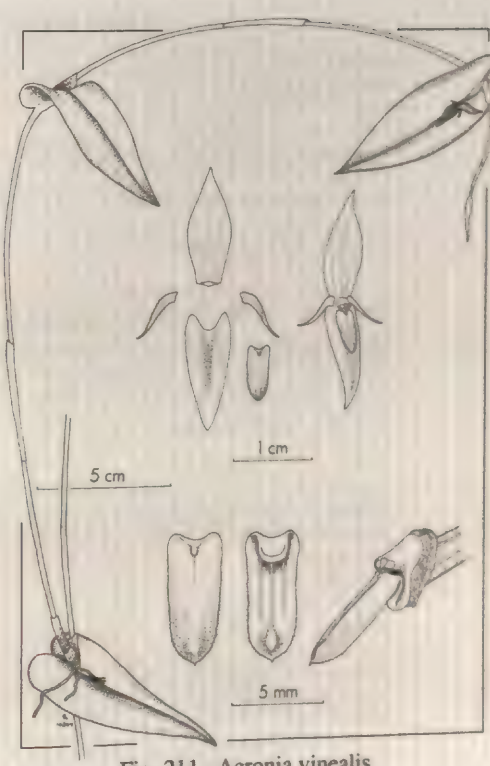

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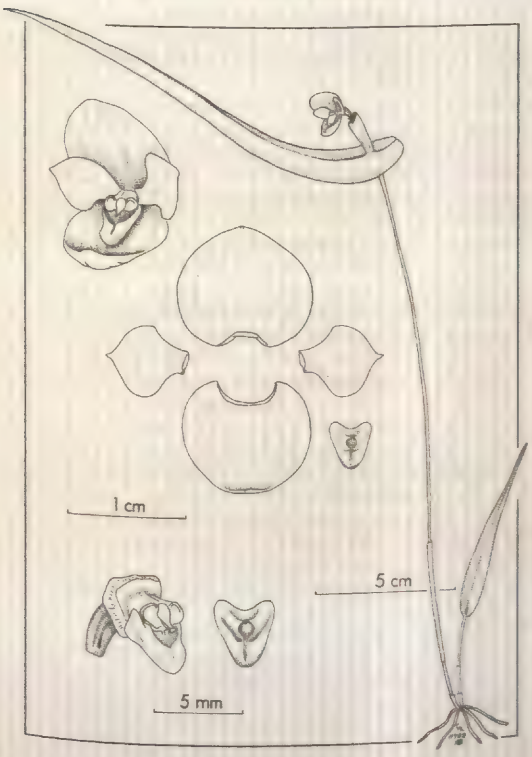
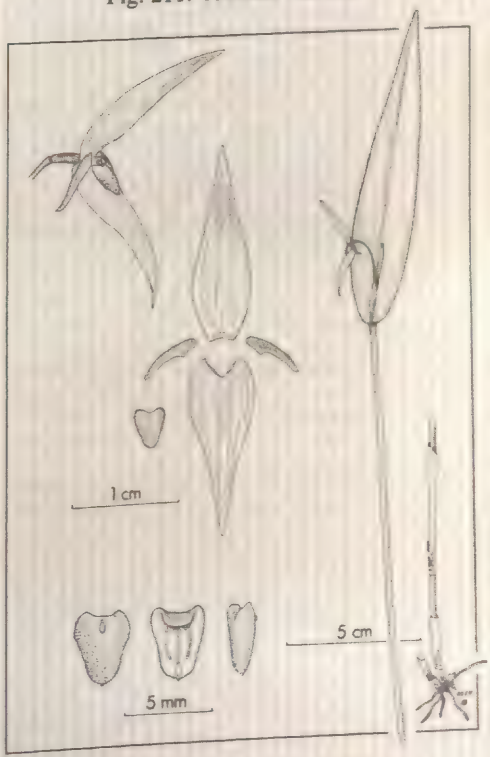


Fig. 212. Acronia volans



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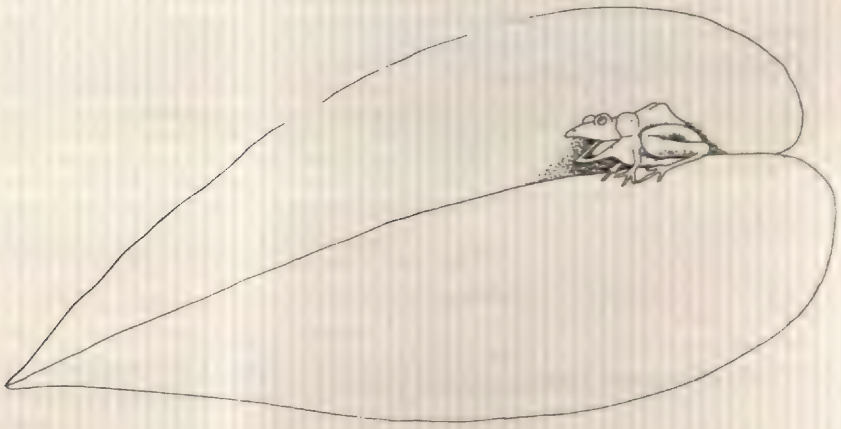

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ADDENDA TO *ACIANTHERA, ANDINIA, DRACULA, DRESSLERELLA, LEPANTHES,* AND *RESTREPIA*

The following species are addenda to genera already revised in previous numbers of *Icones Pleurothallidinarum.*

New species:
Acianthera krahnii Luer & Vásquez
Andinia hirtzii Luer
Dracula veleziana Luer & V.N.M. Rao
Dresslerella cloesii Luer
Dresslerella lasiocampa Luer & Hirtz
Lepanthes florencia Dod ex Luer
Restrepia howei Luer

Acianthera krahnii Luer & Vásquez, sp. nov.

Ety.: Named for W. Krahn, of Stuttgart, Germany, co-collector of the species.

Inter species subgeneris *Acianthera* rhizoma crassissima repente, ramicaulibus crassis foliis brevioribus, flore singuli pedunculo abbreviato, sepalis crassissimis libris oblongis obtusis, petalis brevioris oblongis et labello oblongo trilobo, lobo antico rotundo minute rugoso, lobis lateralibus ad medium brevibus distinguitur.

Plant medium in size, epiphytic, shortly repent, the rhizome stout, 4-5 mm thick, 1-2 cm long between ramicauls; roots slender. Ramicauls stout, terete, ascending-erect, 2-3 cm long, with a tubular sheath near the middle and another sheath at the base. **Leaf** erect, thickly coriaceous, elliptical, subacute, 6-8 cm long, 1.7-2.3 cm wide, the base cuneate, sessile. **Inflorescence** a single flower borne by a peduncle 1-2 mm long, from a spathe 3-4 mm long, at the base of the leaf; floral bract tubular, 3 mm long; pedicels 4 mm long with a filament; ovary minutely verrucose, 3 mm long, 1.25 mm thick; **sepals** light green, with a thin, purple edge, fleshy, glabrous, the dorsal sepal elliptical, obtuse, 7 mm long, 3 mm wide, 3-veined, the lateral sepals free to the base, oblong, obtuse, slightly oblique, 6 mm long, 2.75 mm wide, 3-veined; **petals** colored as the sepals, glabrous, oblong, obtuse, 3.5 mm long, 1 mm wide, 1-veined; **lip** dark purple, thick, elliptical-trilobed, 3.75 mm long, 1.5 mm wide unexpanded, the apical lobe round, minutely rugose, the lateral lobes erect from near the middle, the apices short, antrorse, subacute, the disc sulcate below the middle, the base truncate, hinged to the colum-foot; **column** semiterete, 3 mm long, the foot stout, 1 mm long, the anther, rostellum and stigma ventral.

BOLIVIA: **Santa Cruz**: Cerro Fraile between Florida and Bellavista, alt. 1330 m, 14 Oct. 2003, *R. Vásquez & W. Krahn 4809* (Holotype LPB), C. Luer illustr. 20541.

With a thick, creeping rhizome; stout ramicauls shorter than thick, elliptical leaves; and a short, single-flowered inflorescence, this species is distinct among other members the genus *Acianthera.* All three sepals are free and fleshy; the petals are oblong and single-veined; and the lip has short, broad, lateral lobes below the middle.

Andinia hirtzii Luer, sp. nov.

Ety.: Named for Alexander Hirtz, indefatigable collector of the Orchidaceae of Ecuador.

Species haec *Andiniae schizopogoni* (Luer) Pridgeon & M.W.Chase affinis, sed habitu minore, sepalis lateralibus minute papillosis supra medium connatis et petalis anguste linearibus integrissimis differt.

Plant small, epiphytic, ascending; roots slender. Ramicauls slender, ascending, fasciculate, less than 10 mm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, obtuse, 3-4 cm long including a petiole ca. 1 cm long, 6-8 mm wide, the base gradually narrowed into the petiole. **Inflorescence** a loose, successively 2- to 4-flowered raceme, up to 11 cm long including the capillary peduncle 5-6 cm long, borne laterally from the ramicaul; floral bract oblique, acute, 2 mm long; pedicel 6-8 mm long; ovary long-spiculate, 1.5 mm long and wide; **sepals** translucent white with light rose stripes on the laterals, carinate, the dorsal sepal narrowly ovate, acute, acuminate, 18 mm long, 3 mm wide, 3-veined, the lateral sepals narrowly ovate, oblique, acute, acuminate, connate 2/3 the length, minutely papillose centrally, 18 mm long, connate 13 mm, 5 mm wide together, with the sides revolute; **petals** white, narrowly linear, acute, entire, 15 mm long, 1 mm wide; **lip** white with rose papules, thick, subquadrate, 3 mm long, 3 mm wide, the apex broadly rounded, with a short, obtuse apiculum, the disc cellular-papillose, with a rounded depression behind the apex, deflexed below the middle and held against the column, with broadly rounded, erect, sides flanking the column, the base hinged to the base of the column; **column** white, stout, semiterete, 3 mm long, the anther, rostellum and stigma subapical, the foot obsolescent.

EDUADOR: **Azuay**: around Santa Isabel, road to Shaglli, alt. 2000 m, 20 Sept. 2004, *A. Hirtz, E. Sanchez, W. & J. Coeck 9061* (Holotype: MO); without locality, collected by M. Portilla, cultivated by Ecuagenera, Gualaceo, 4 Mar. 2001, *C. Luer 19688* (MO).

Closely allied and similar in many respects to *Andinia schizopogon*, this species appears more distinct that the meagre differences in details would warrant. The sepals of *A. hirtzii* are translucent silvery white, while the long-haired, shaggy, red beard of *A. schizopogon* is reduced to minute, purple papillae on the inner halves of the lateral sepals that are connate to above the middle.

Dracula veleziana Luer & V.N.M. Rao, sp. nov.

Ety.: Named for Aura Velez, mother of Francisco Villegas of Orquifollages, Medellín, Colombia.

Species haec *Draculae simiae* (Luer) Luer affinis, sed foliis majoribus latissimis, sepalis eburneis lateralibus ad medium bruneo suffusis et labello multissime venoso differt.

Plant large, epiphytic, densely caespitose; roots coarse. Ramicauls stout, erect, 4-6 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thinly coriaceous, carinate, elliptical-oblanceolate, acute, 18-20 cm long including an indistinct petiole ca. 5 cm long, 3-4 cm wide, gradually narrowed below into the conduplicate, petiolate base. **Inflorescence** a successively few-flowered raceme, borne by a sparsely bracted, horizontal to descending peduncle to 25 cm long, from low on the ramicaul; floral bract tubular, 13 mm long; pedicel 23 mm long; ovary white, 6 mm long, 3 mm thick, round in cross section; **sepals** creamy white, shortly pubescent within, the dorsal sepal broadly ovate, 20 mm long, 25 mm wide, concave, connate to the lateral sepals for 8 mm to form a gaping, cupped flower, the apex rounded, abruptly contracted into a slender, erect, red-brown tail ca. 5 cm long, the lateral sepals connate 20 mm into a transversely ovoid lamina, 25 mm long, 39 mm wide, with a broad, shallow mentum suffused with brown centrally, the apices obtuse, contracted into slender, red-brown tails similar to that of the dorsal sepal; **petals** white, marked with dark brown, cartilaginous, oblong, 4 mm long, 2.5 mm wide, the apex bivalvate, papillose between the laminae, the inner lamina incurved, the outer lamina rounded, denticulate; **lip** yellow-white, spathulate, 16 mm long, 10 mm wide, the epichile suborbicular, shallowly concave without incurved margins, filled within with multiple, branched lamellae radiating from a central lamella, 11 mm long, 10 mm wide, the hypochile broadly thickly ovoid, 5 mm long, 5 mm wide, with rounded sides, cleft centrally, the base concave, hinged to the column-foot; **column** white, stout, semiterete, 5 mm long, with a stout foot 5 mm long.

COLOMBIA: **Antioquia**: Urrao, Encarnacíon, alt. 1900-2100 m, first collected in 1994 by Manuel Zapata, cultivated by Francisco Villegas at Orquifollages, Medellín, flowered in cultivation, 25 Apr. 2004, by *V.N.M. Rao 171* (Holotype: MO), C. Luer illustr. 20805.

This species from the Western Cordillera of Colombia, is most similar to *Dracula simia* from southeastern Ecuador. Vegetatively, *D. veleziana* is larger with broad leaves. The sepals are creamy white with brown suffusion behind the lip. The lips of both species are similar, shallowly concave with non-incurved margins, but the latter with many more radiating veins.

Dresslerella cloesii Luer, sp. nov.

Ety.: Named for Patrick Cloes of Hasselt, Belgium, collector of this species.

Species haec *Dresslerellae caesariatae* Luer affinis, sed habitu floreque minore, et labelli callo trifurcato distinguitur.

Plant small, epiphytic, caespitose; roots coarse. Ramicauls erect, suberect to horizontal, stout, 1.5-3.5 cm long, enclosed by 3-4 pubescent, imbricating sheaths. **Leaf** erect to suberect, thickly coriaceous, dark green, covered on both sides by white trichomes, elliptic-oblong, subacute, 2.5-3.5 cm long, 1-1.2 cm wide, the base cuneate, sessile. **Inflorescence** a succession of single flowers, borne by a stout peduncle, 1-2 mm long, enclosed by a sheath at the base of the leaf; floral bract long-pubescent, 1.5 mm long; pedicel pubescent, 2 mm long; ovary densely long-pubescent, 2 mm long; **sepals** purple, fleshy, covered externally by a dense, white pubescence, the dorsal sepal ovate-triangular, acute, acuminate, 9 mm long, 3 mm wide, 3-veined, apparently connate only basally to the lateral sepals, the lateral sepals connate to the apex into a deeply concave, scrotifomm synsepal with involute margins, 10 mm long, 5 mm wide unexpanded; **petals** elliptical-obovate, oblique, acute, acuminate, 6.5 mm long, 2 mm wide; **lip** purple, pandurate, 4 mm long, the apical lobe transverse with dentate margins, transversely obtuse, 2 mm wide, the lateral lobes erect, oblique, obtuse, 3 mm wide expanded, the disc with an erect pair of rounded lamellae within the lateral lobes, and a linear callus that extends to the claw where it is met by another callus from either lateral lobe, the base truncate with minute marginal lobules, hinged to the column-foot; **column** slender, semiterete, 3 mm long, bidentate at the apex, the base thick, 1 mm long.

ECUADOR: **Zamora-Chinchipe**: between Loja and Zamora, collected by P. Cloes, flowered in cultivation by Cloes in Hasselt, Belgium, May 1998, *C. Luer 18793* (Holotype: MO); epiphytic in cloud forest between Loja and Zamora, alt. ca. 1700 m, flowered in cultivation at MO, 1 Apr. 1971, *C. H. Dodson 390* (MO, SEL).

In habit, this little species is similar to *Dresslerella hirsutissima*: an oblong leaf and an equally long ramicaul, and a successive flower borne from the base of the leaf by a short peduncle. The flower is similar to the larger *D. caesariata* that is subtended by a much smaller floral bract. The dorsal sepal is apparently free from the saclike synsepal. A trifid callus is present between the bases of the lateral lobes.

Dresslerella hirsutissima (C.Schweinf.) Luer, Selbyana 2: 185, 1978.

Bas.: *Pleurothallis hirsutissima* C.Schweinf., Bot. Mus. Leafl. 15: 94, 1951.

Ety.: From the Latin *hirsutissimus*, "very hairy," in reference to the abundance of trichomes.

Syn.: *Restrepiella hirsutissima* (C.Schweinf.) Garay & Dunsterv., Venez. Orchids III. 4: 266, 1966.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, stout, 4-5 cm long, enclosed by 3 diffusely dotted, long-pilose, imbricating sheaths. **Leaf** greenish, diffusely dotted with purple, long-pilose, erect to suberect, fleshy, elliptical-oblong, obtuse, 4-4.5 cm long, 1.2-1.5 cm wide, the base broadly cuneate, sessile. **Inflorescence** a succession of single flowers, borne in a congested raceme ca. 5 mm long, by a stout peduncle 1-2 mm long, with a basal sheath ca. 5 mm long at the base of the leaf; floral bracts tubular, long-pubescent, 5-6 mm long; pedicel pubescent, 3-4 mm long; ovary densely long-pubescent, 1-1.5 mm long; **sepals** greenish tan, with red spots within, long-pubescent externally, the dorsal sepal ovate-triangular, acute, acuminate into a slender, red, clavellate tail, 10-18 mm long, 4.5 mm wide, 5-veined, free from the lateral sepals, the lateral sepals connate above the middle into a deeply concave, obtuse, scaphoid synsepal, 10-18 mm long, 12 mm wide expanded, 14-veined; **petals** microscopically ciliate, obliquely obovate, acute, acuminate into a slender, red, clavellate tail, 10-15 mm long, 3 mm wide, 3-veined; **lip** light rose, dotted with purple, pandurate, 5-7 mm long, the apical lobe long-papillose, ovate, obtuse, minutely apiculate, deeply fringed, 2.75 mm wide, the isthmus 1.5 mm wide, with oblique, obtuse, apiculate, erect, marginal lobes below the isthmus, the disc with transverse, broken lamellae, with a pair of verrucose carinae from within the lateral lobes, across the isthmus into verrucae on the anterior lobe, the base truncate, hinged to the column-foot; **column** slender, semiterete, 4 mm long, the apex bidentate, the thick, 2 mm long.

PERU: **Tarma**: Agua Dulce, alt. 1800 m, 15 Mar. 1948, *F. Woykowsky 35475* (Holotype: AMES; Isotype: JEPS).
ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, Zurmi, alt. 800 m, flowered in cultivation 2 May 2004, at Ecuagenera, Gualaceo, *A. Hirtz 8739* (MO), C. Luer illustr. 20802.

This species is apparently uncommon, known from two distant localities. A different species, described here as *Dresslerella lasiocampa*, has been previously identified as *D. hirsutissima*. *Dresslerella hirsutissima* is characterized by ellipti-

cal-oblong, long-pubescent leaves that are borne by more or less erect ramicauls about equally as long, instead of much shorter and broader, prone leaves. The flowers of the two species are similar, those of *D. hirsutissima* being borne by very short peduncles, while those of *D. lasiocampa* are held erect by a considerably longer peduncle. The apical lobe of the lip of *D. hirsutissima* is fimbriate and long-papillose, while the apical lobe of *D. lasiocampa* is only microscopically verrucose.

Dresslerella lasiocampa Luer & Hirtz, sp. nov.

Ety.: From the Greek *lasiocampa*, "a wooly caterpillar," for the fancied appearance of the flower.

Species haec *Dresslerellae hirsutissimae* (C.Schweinf.) Luer affinis, sed ramicauibus brevioribus, foliis latioribus, pedunculo longiore erecto, et labello ad apicem non fimbriato distinguitur.

Plant small, epiphytic, caespitose, more or less forming a rosette; roots slender. Ramicauls horizontal to suberect, stout, 1-3 cm long, enclosed by 3 pilose, imbricating sheaths. **Leaf** light green, suffused with purple beneath, suberect to horizontal, erect in relationship to the ramicaul, fleshy, verruculose, covered on both sides by long, white trichomes, elliptical, obtuse, 2-3.5 cm long, 1.5-2 cm wide, the base broadly cuneate, sessile. **Inflorescence** a succession of single flowers, borne by an erect peduncle 12-14 mm long, with a basal sheath 5 mm long, at the base of the leaf; floral bract tubular, long-pubescent, 9-10 mm long; pedicel pubescent, 6-7 mm long; ovary densely long-pubescent, 2.5 mm long; **sepals** translucent yellow-green, diffusely spotted with purple, covered externally by a long, white pubescence, the dorsal sepal ovate-triangular, acute, acuminate, clavellate, 14 mm long, 4.5 mm wide, 5-veined, the lateral sepals connate to the apex into a deeply concave, obtuse, scaphoid synsepal, 13 mm long, 7 mm wide unexpanded; **petals** translucent with purple spots, minutely pubescent, obovate below the middle, oblique, 11.5 mm long, 3.5 mm wide, the apex acute, long-acuminate, the clavate tip yellow-orange; **lip** light green, dotted with purple, pandurate, 6 mm long, the apical lobe ovate, minutely pubescent, 2 mm wide, with the apex rounded, apiculate, obovate below the narrow isthmus, the lateral lobes thin, uncinate, erect, the disc with a low pair of converging carinae, the claw with an acute, erect callus, the base truncate with minute marginal lobules, hinged to the column-foot; **column** slender, semiterete, 4 mm long, winged at the bidentate apex, the base developed into a thick, pedestal-like foot.

ECUADOR: **Morona-Santiago**: alt. 1500 m, collected by M. Portilla, flowered in cultivation 6 Apr. 1979, *C. Luer 4054* (Holotype: SEL); near Chigüinda, cultivated at Ecuagenera, Gualaceo, 5 Mar, 2001, *C. Luer 19666* (MO).

This species has been mistakenly identified as Peruvian *Dresslerella hirsutissima*. At that time, *D. lasiocampa* was the only species with long-pubescent sepals, and with an attenuated, clavate dorsal sepal and petals known from Ecuador. The other differences were thought to be geographic variations. It differs from *D. hirsutissima* in the smaller, more or less rosette habit with much shorter, prone ramicauls, and broader leaves. The flower is held erect by a considerably longer peduncle and pedicel above the surface of the leaf. The ramicauls of *D. hirsutissima* are as long as the narrower leaves, and the flowers are borne by short pedicels at the base of the leaf. The apical lobe of the lip of *D. lasiocampa* is only microscopically verrucose, while the apical lobe of *D. hirsutissima* is deeply fimbriate and long-papillose. *Dresslerella lasiocampa* is most similar to *D. pilosissima* from Costa Rica.

Lepanthes florencia Dod ex Luer, sp. nov.

Ety.: this epithet was intended by Dod, and its meaning is obscure.

Inter species generis *Lepanthidis* ex Hispaniola, planta parva mediocrisve, racemo congestissime multifloro folio elliptico convexo subaequilongo, sepalis integris late ovatis subacutis petalis aequilongis, labelli laminis anguste ovatis et appendice ovoidea pubescenti.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-7 cm long, enclosed by 5-8 ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, slightly convex, stippled beneath in purple, elliptical, subacute to obtuse, 24-38 mm long, 16-25 mm wide, the base broadly obtuse, contracted into a petiole 4-8 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 22 mm long, borne beneath the leaf by a peduncle 8-15 mm long; floral bracts slightly echinate, 1 mm long; pedicels 1.5 mm long; ovary 1.5-2 mm long; **sepals** yellow, glabrous,

subcarinate, ovate, subacute, the dorsal sepal 4 mm long, 3.25 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals, oblique, 4 mm long, 2.25 mm wide, 2-veined, connate 1 mm; **petals** orange with red margins, microscopically pubescent, transversely bilobed, 1.25 mm long, 4 mm wide, the lobes opposite, the upper lobe oblong-ovate, obtuse, the lower lobe half as long, triangular, acute; **lip** red-orange, microscopically pubescent, bilaminate, the blades narrowly ovate, with acute apices and obtuse bases, 1.8 mm long, the connectives and body broad, connate to the base of the column, the sinus obtuse, with an ovoid, pubescent appendix; **column** 1 mm long, the anther and stigma apical.

HAITI: Massif de la Hotte, Les Cayes, Formond, collected ca. 1982, flowered in cultivation May 1986, as Formond #7, *D.D. Dod s.n.* (Holotype: MO), C. Luer illustr. 12170.

This species is apparently endemic in the mountains of eastern Haiti where it was collected by Don Dod and cultivated as "ovalon." It is characterized by a congested raceme borne behind a convex, elliptical leaf that is stippled with purple beneath; entire, subacute sepals; relatively large petals with the oblong, upper lobe twice larger than the triangular, lower lobe; and a lip with narrowly ovate blades that are straight and acute at the apex. The connectives are broad, and the appendix is ovoid and pubescent.

Restrepia howei Luer, sp. nov.

Ety.: Named for Colin Howe, curator of the U.K. National Collection of *Restrepia*, who cultivates this species.

Species haec *Restrepiae aspasicensis* Rchb.f. similis, sed synsepalo diffuse maculato, petalis microscopice subfimbriatis, et labello subpandurato ad apicem minutissime verruculoso differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, 2.5-5 cm long, enclosed by 5-7 thin, whitish, loose, oblique, acute, compressed, imbricating sheaths speckled with brown. **Leaf** erect, coriaceous, elliptical-ovate, subacute, 3-4.25 cm long, 1.5-2 cm wide, the base cuneate into a petiole 3 mm long. **Inflorescence** a small, solitary, flower, produced successively in a fascicle; peduncle slender, erect, 2.5-3.5 cm long; floral bract thin, tubular, 3 mm long; pedicel 3 mm long, with a filament 2.5 mm long; ovary 3 mm long; **sepals** membranous, glabrous, the dorsal sepal free, white with brown along middle, narrowly ovate in the lower half, contracted into a slender, clavate apex, 11 mm long, 2 mm wide above the base, 5-veined, the lateral sepals light tan, diffusely spotted with brown, connate into an elliptical, curved, concave synsepal, 11.5 mm long, 5 mm wide, multiveined, bifid at the tip with the apices subacute; **petals** membranous, translucent, narrowly oblong above the base, each margin with a few microscopic hairs, contracted above the middle into a capillary, clavate tip, 6 mm long, 0.75 mm wide above the base; **lip** orangey tan, minutely spotted with brown, oblong-pandurate, 5 mm long, 2 mm wide, the isthmus 1 mm wide, the epichile obovate, subtruncate, minutely muricate, the disc with a pair of low, longitudinal calli from below the middle, smooth medially, the hypochile broadly concave, with marginal, filiform, uncinate processes nearly 1.5 mm long, the subtruncate base smooth, connected to the column-foot by a short, thick, cylindrical neck; **column** slender, 3.5 mm long, the base pedestal-like.

ECUADOR: without collection data, cultivated by the U.K. National Collection of *Restrepia*, Hermitage, Berkshire, England, 2 Oct. 2004, *Colin Howe 003* (Holotype: MO); C. Luer illustr. 20904.

A single leaf from Ecuador, without known locality, was given to the U.K. National Collection of *Restrepia* by Roy Barrow in 2001. When it flowered three years later, the small flower it produced appeared to be related to *R. aspasicensis* from the Eastern Cordillera of Colombia. It differs from the later by diffusely spotted, brown synsepals; petals with a only few, microscopic, marginal hairs; and a longer, pandurate lip with the apical portion only minutely verrucose and smooth below the isthmus.

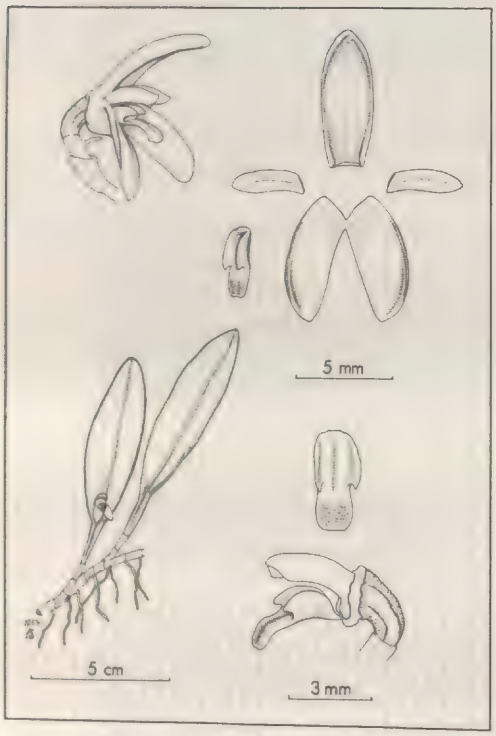


Fig. 1. Acianthera krahnii

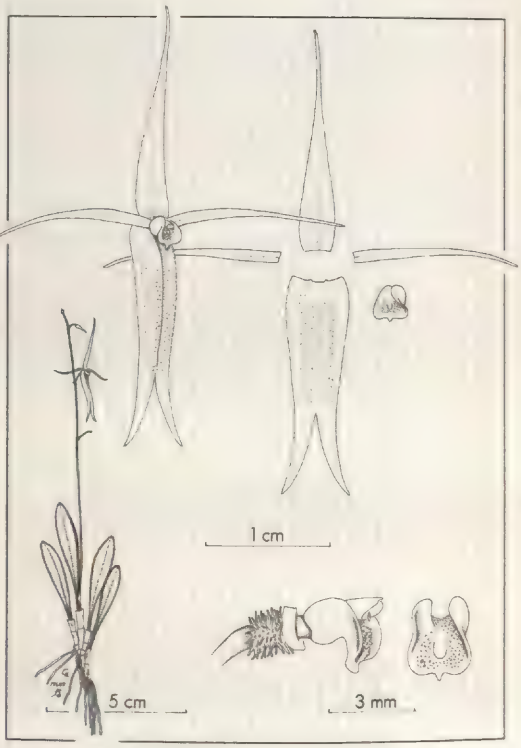


Fig. 2. Andinia hirtzii

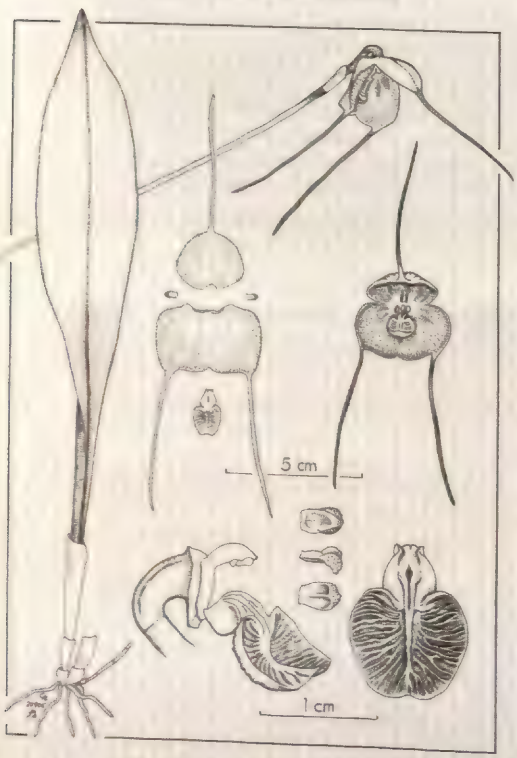


Fig. 3. Dracula veleziana

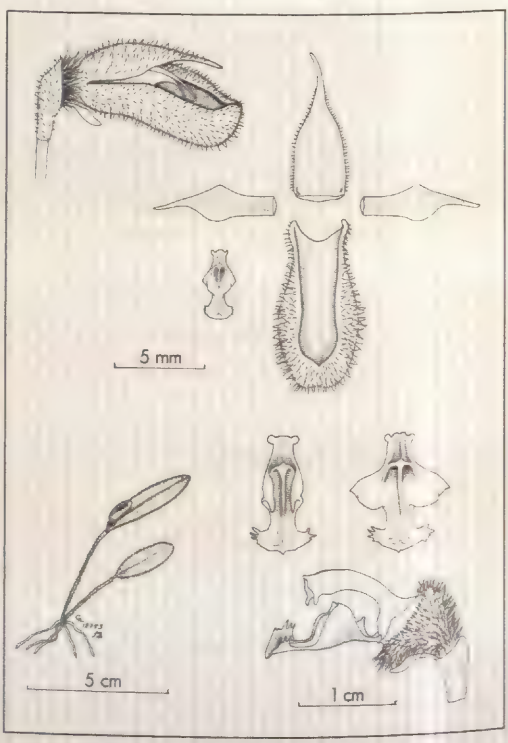


Fig. 4. Dresslerella cloesii

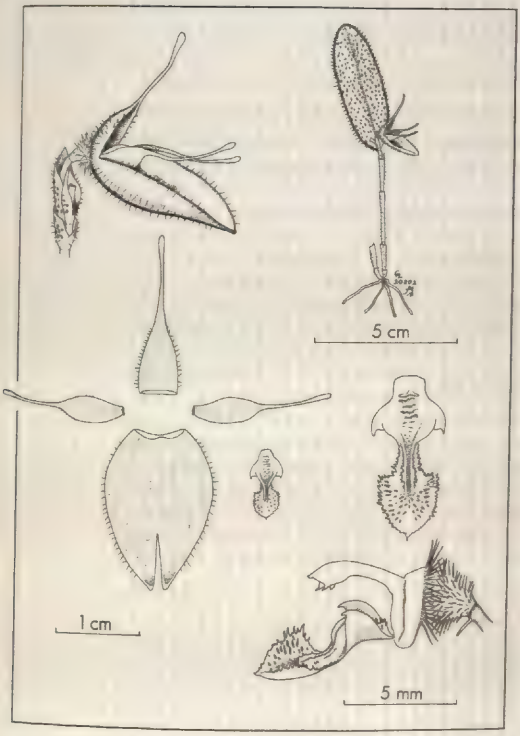


Fig. 5. Dresslerella hirsutissima

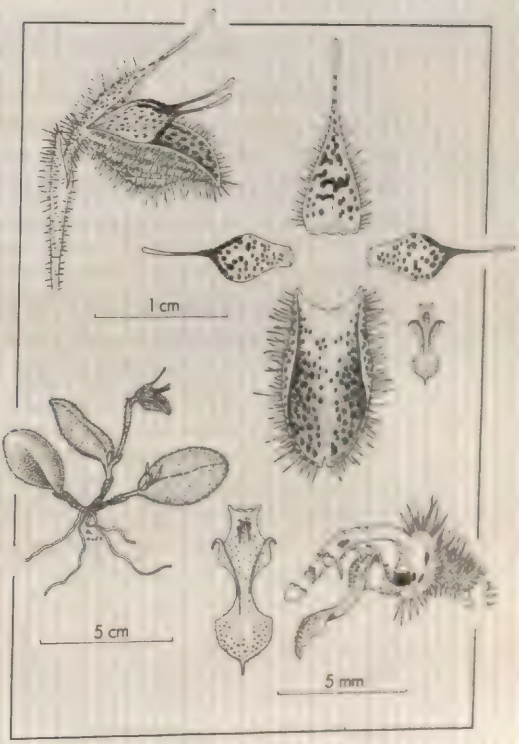


Fig. 6. Dresslerella lasiocampa

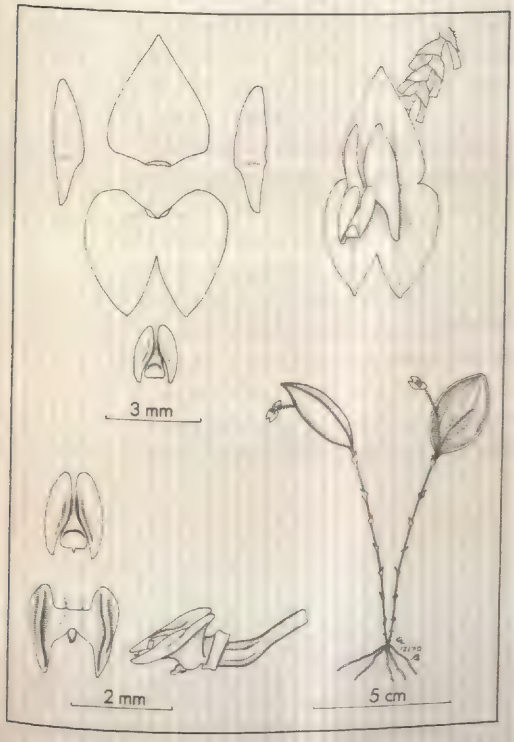


Fig. 7. Lepanthes florencia

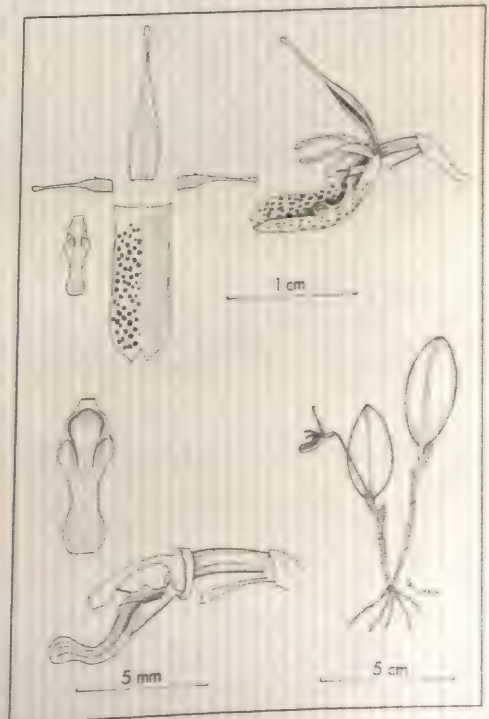


Fig. 8. Restrepia howei

ADDITIONS TO THE GENUS *MASDEVALLIA*

The following species are addenda to the Monograph of the genus *Masdevallia*. The new species of *Masdevallia* are printed in identical format to *Systematics of Masdevallia*, so that the pages may be removed and added to their respective volumes. The pages are numbered to indicate places for insertion, *i.e.*, 795a. to *precede* 795.

New species:
Masdevallia andresiana Luer & Maduro
Masdevallia calcarata Luer & V.N.M. Rao
Masdevallia chaucana Luer & Hirtz
Masdevallia hartman-filii Luer, Hirtz & V.N.M. Rao
Masdevallia munae Luer & R.Barrow
Masdevallia naevia Luer & V.N.M. Rao
Masdevallia phoebe Luer & Hirtz
Masdevallia priscillana Luer & V.N.M. Rao
Masdevallia superbiens Luer & Hirtz
Masdevallia telloi Luer & Hirtz

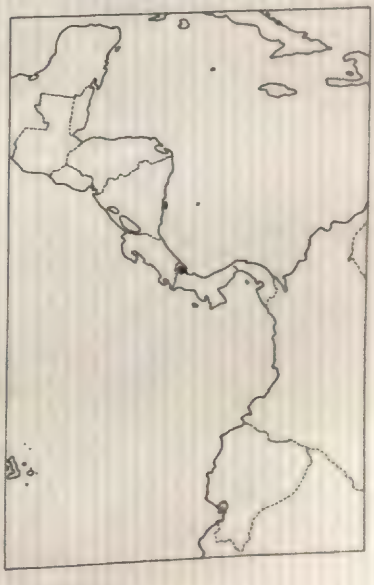
Masdevallia andresiana Luer & Maduro, sp. nov.

Ety.: Named for Andres Maduro, Jr., elder son of Andres Maduro, proprietor of Maduro's Tropical Flowers, Panama City, Panama, and Finca Dracula, Chiriquí, Panama, co-collector of this species.

Species haec *Masdevalliae maduroi* Luer persimilis, sed sepalis intus guttatis caudis brevioribus, petalorum lamella a callo marginato reducta, et labelli plicis marginalibus difffert.

Plant medium to large in size, epiphytic, caespitose; roots comparatively slender. Ramicauls erect, stout, 1.5-3 cm long, enclosed by 2-3 loose, deciduous, tubular sheaths. **Leaf** erect, thickly coriaceous, 10-15 cm long including the petiole 2-3 cm long, the blade obovate, obtuse, 2.5-3.7 cm wide, cuneate below into the stout, deeply channeled petiole. **Inflorescence** a successive, loosely few-flowered raceme, 1-2 cm between flowers, borne by a very slender peduncle 15 cm long, with 2-3 distant bracts, from the base of a ramicaul; floral bract tubular, 6-7 mm long; pedicel 8-10 mm long; ovary 8 mm long; **sepals** glabrous, the dorsal sepal forwardly directed, shiny purple-brown externally, light tan marked with purple-brown within along the veins, broadly ovate, 12 mm long, 15 mm wide, obtuse, contracted into a slender, yellow-green tail 3.5 cm long, connate to the lateral sepals for 7 mm into a somewhat flattened flower with a short sepaline cup, the lateral sepals purple-brown externally, rosey green within, diffusely dotted with purple-brown, connate 25 mm into an oblong, bifid lamina, 30 mm long, 23 mm wide, shallowly concave centrally, with three parallel lamellae on each side, the apices acute, contracted into slender, light green tails 25 mm long; **petals** yellow-green, strongly marked with purple-brown, cartilaginous, obliquely elliptical, narrowly obtuse, 6 mm long, 4 mm wide, with a callus along the labellar margin, terminating above the base in an acute, retrorse process; **lip** yellow, spotted with purple-brown, oblong-pandurate, narrowed above the middle, 10 mm long, 5 mm wide, the apex obtuse, broadly triangular, the disc with a pair of oblique folds above the middle, shallowly concave below the middle, the base subcordate, hinged beneath nearly to the middle; **column** white with broad, purple margins, semiterete, 8 mm long, the foot 5 mm long, the free extension 4 mm long.

PANAMA: **Bocas del Toro**: alt. 1200 m, collected and Andrew Maduro and son, cultivated by A. Maduro at Finca Dracula, Cerro Punta, Chiriquí, Panama, flowered in cultivation in Wilmington DE, 16 Oct. 1998, by *M. Rao 96* (Holotype: MO), C. Luer 20144.



This species, collected a few years after *Masdevallia maduroi* (Luer, 1998), was thought to be merely a variation of that species. Both occur in westernmost Panama, but *M. andresiana* is found at a higher altitude.

The more colorful *Masdevallia andresiana* appears to be visually distinct in spite of only minor morphological differences. The flowers are smaller with a shallower mentum, and with shorter tails. The petals are smaller with the tall wing reduced to a marginal callus with a re-trorse tooth, and the anterior extension of the column-foot is longer. The folds that divide the lip into an epichile and a hypochile are marginal, instead of non-marginal as in *M. maduroi*.

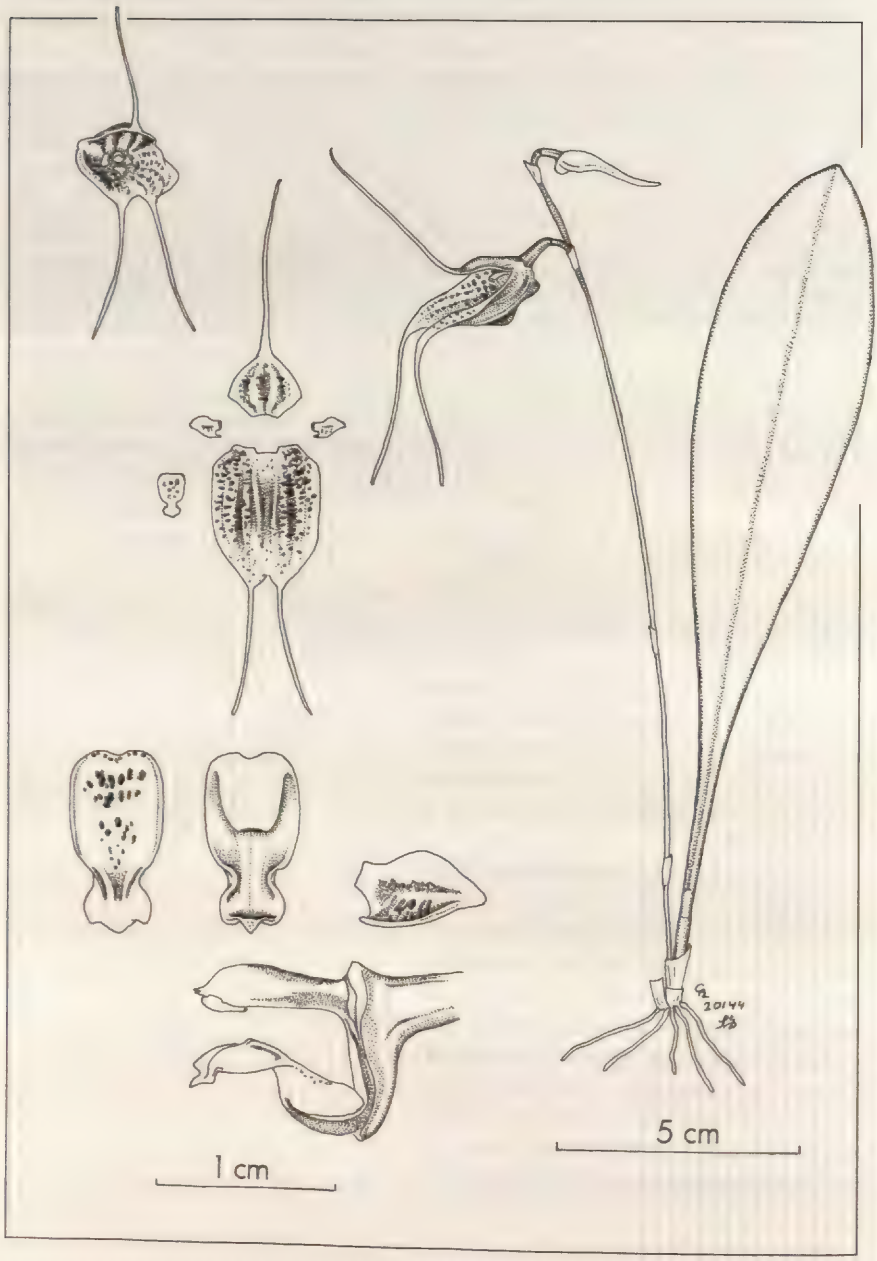


Plate 665. Masdevallia andresiana

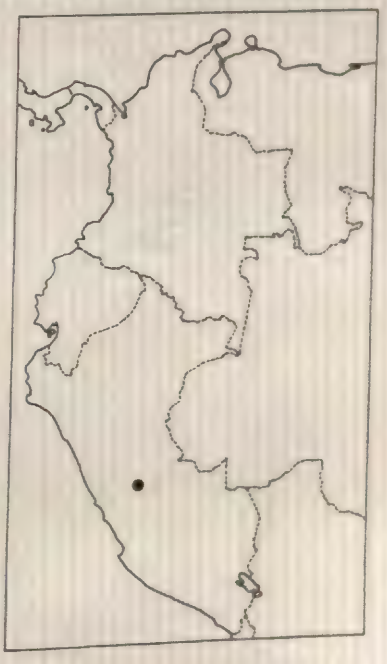
Masdevallia calcarata Luer & V.N.M. Rao, sp. nov.

Ety.: From the Latin *calcaratus*, "with a spur," referring to the deeply conical mentum of the flower.

Inter species *Masdevalliae* subsect. *Caudatae* Veitch sepalis lateralibus mentum retrorsum profunde conicum fascientibus distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 10-13 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 37 mm long including a petiole 16-17 mm long, the blade broadly elliptical, obtuse to rounded, 16-17 mm wide, contracted below into the petiole. **Inflorescence** a single flower produced by an erect peduncle 7 cm long, slender below, becoming stout above, with a bract on the lower quarter, from low on the ramicaul; floral bract tubular, 7-8 mm long; pedicel stout, 23 mm long; ovary white, 5 mm long; **sepals** glabrous, creamy white, with microscopically erose edges, the dorsal sepal tall-carinate below the middle, channeled within below the middle opposite the external carina, the blade elliptical, concave, 20 mm long, 12 mm wide, 5-veined, the apex obtuse, contracted abruptly into a yellowish tail 15-17 mm long, 1 mm thick, connate 5 mm below to the lateral sepals and column-foot to form a sepaline cup with a conical, retrorse mentum, the lateral sepals ovate, oblique, obtuse, contracted into stout tails 11-12 mm long, similar to that of the dorsal sepal; **petals** white, oblong, oblique, 6 mm long, 2 mm wide, the truncate apex shallowly lobulate, the labellar margin with a longitudinal callus ending in a thick, obtuse, retrorse process; **lip** white, ovate, thin, 4.5 mm long, 3 mm wide, the apex narrowly rounded, with rounded, midline, marginal callus, the disc featureless except for thickening at the rounded base, hinged beneath; **column** white, stout, semiterete, 4 mm long, the foot thick, equally long, with an incurved extension.

PERU: without locality, collected by a collector employed by M. Arias, 2003, purchased from M. Arias, 2003, flowered in cultivation in Wilmington, DE, Aug. 2004, *V.N.M. Rao 188* (Holotype: MO), C. Luer illustr. 20824.



This species, unfortunately without known locality at this time, is so distinct, that it will eventually be recognized from the locality in the future. It is a small plant with broadly elliptical leaves with a slender petiole. The strict peduncle is slender below, but becomes stout with a stout pedicle a considerable distance above the leaf. The creamy white flower with its conspicuous, retrorse mentum is proportionately large for the plant. A similar but much smaller mentum occurs in *Masdevallia caudata* Lindl. and its allies. The junction between the dorsal and lateral sepals, protrudes with an acute, ear-like angle.

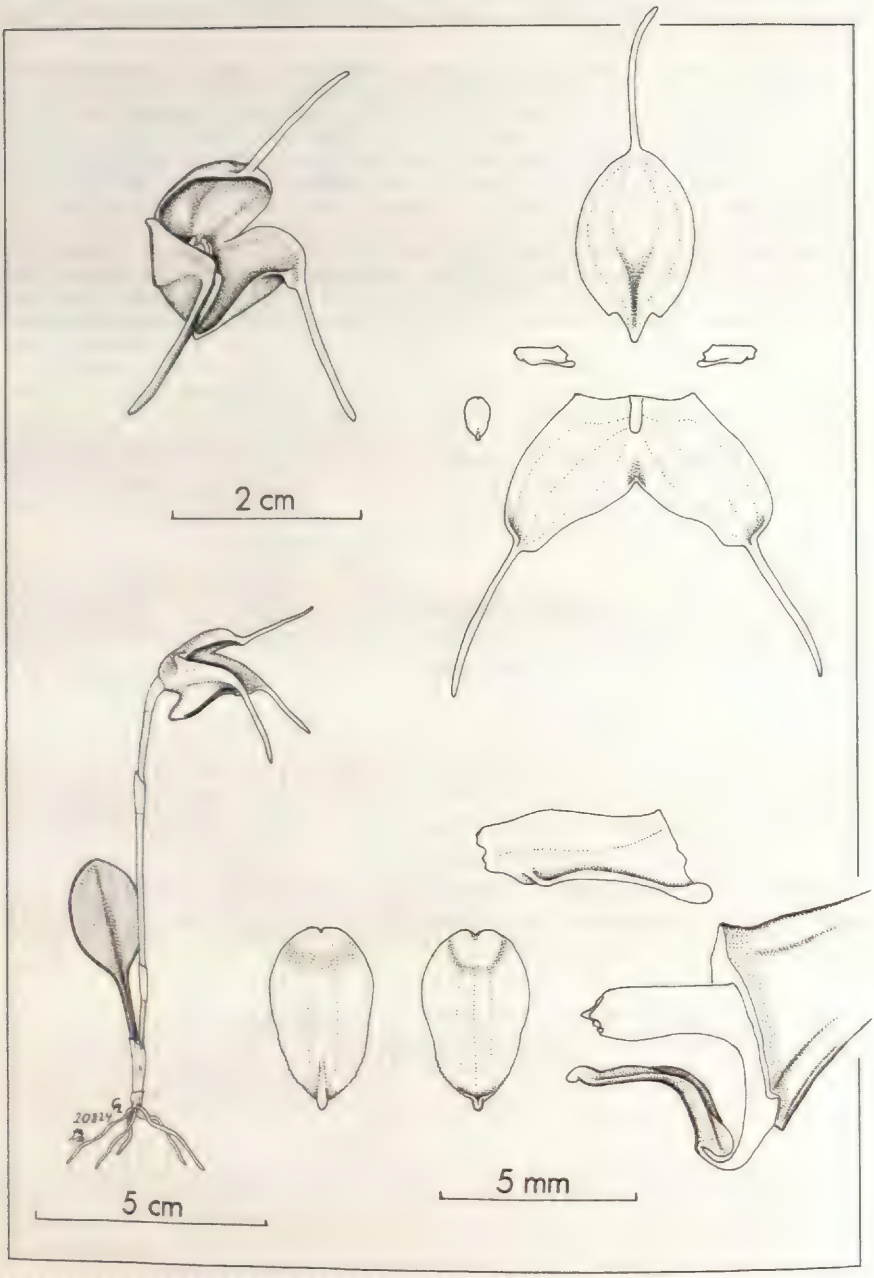


Plate 666. Masdevallia calcarata

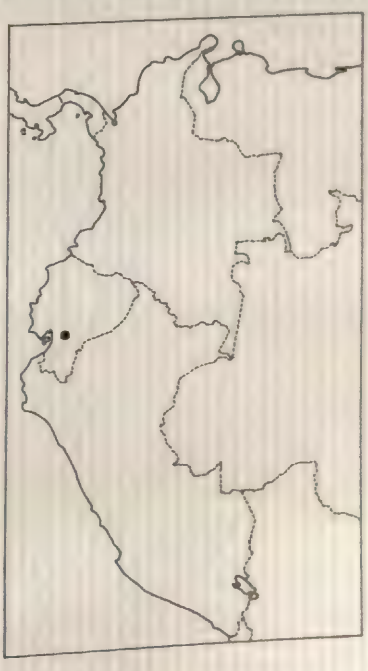
Masdevallia chaucana Luer & Hirtz, sp. nov.

Ety.: Named for the community of Chauca on the western slopes of the province of Azuay near where the species was collected.

Species haec *Masdevalliae merinoi* Luer & Portilla affinis, sed sepalis intense purpureo-suffusis maculatisque semiclausis lateralibus ovatis brevioribus et labelli obovato marginibus basalibus erectis grandis rotundis differt.

Plant small, epiphytic, caespitose; roots slender; ramicauls slender, erect, 0.5-1 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 4-6.5 cm long including the petiole 1-2 cm long, the blade elliptical, acute, 1-1.4 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a successive, few-flowered raceme, borne by a slender, suberect to horizontal peduncle 4-6 cm long, with a bract at the base and another on the lower quarter, from low on the ramicaul; floral bract tubular, 6 mm long; pedicel 6 mm long; ovary 3 mm long; **sepals** dull rose, diffusely spotted and suffused with red-purple, glabrous, the dorsal sepal elliptical, ca. 17 mm long, 7 mm wide, connate to the lateral sepals for 5 mm to form a cylindrical tube, the apex acute, long-acuminate into a slender, purple-spotted tail ca. 4 cm long, the entire length 5.3 cm, the lateral sepals broadly subovate, oblique, 21 mm long, 8 mm wide, the entire length 5.5 cm, connate 11 mm into a lamina 16 mm wide, the apices acute, attenuated into slender tails; **petals** purple, elliptical, acute, 5 mm long, 1.5 mm wide, callous along the labellar margin of the middle third; **lip** purple, oblong, 8 mm long, 3 mm wide, the apex rounded, minutely erose, disc shallowly sulcate between a pair of low calli on the middle third, the base decurved, with erect, rounded margins, subcordate, hinged beneath; **column** semiterete, 4 mm long, the foot 4 mm long excluding the incurved extension.

ECUADOR: **Azuay**: western declivity, near Chauca, alt. 2000 m, collected by Ecuagenera, flowered in cultivation by Ecuagenera, Gualaceo, 2 May 2004, *A. Hirtz 8737* (Holotype: MO), C. Luer illustr. 20878.



This species is the only one of *Masdevallia* section *Amaluzae* found on the western declivity of the Andes. It is most closely allied to *Masdevallia merinoi*, but it differs mostly in the appearance of the flowers. The only two peduncles available for study bore the flower in the non-resupinate position. It is not known if other plants produce the same.

The flowers are heavily suffused and marked with purple, and the sepals do not spread, giving the flowers a tubular appearance. The free portions of the lateral sepals of *M. chaucana* are shorter and broader than those of *M. merinoi* that are connate much farther beyond the sepaline tube. The lip of *M. chaucana* is obovate with large, erect, rounded margins at the base, while the lip of *M. merinoi* is oblong with low basal margins.

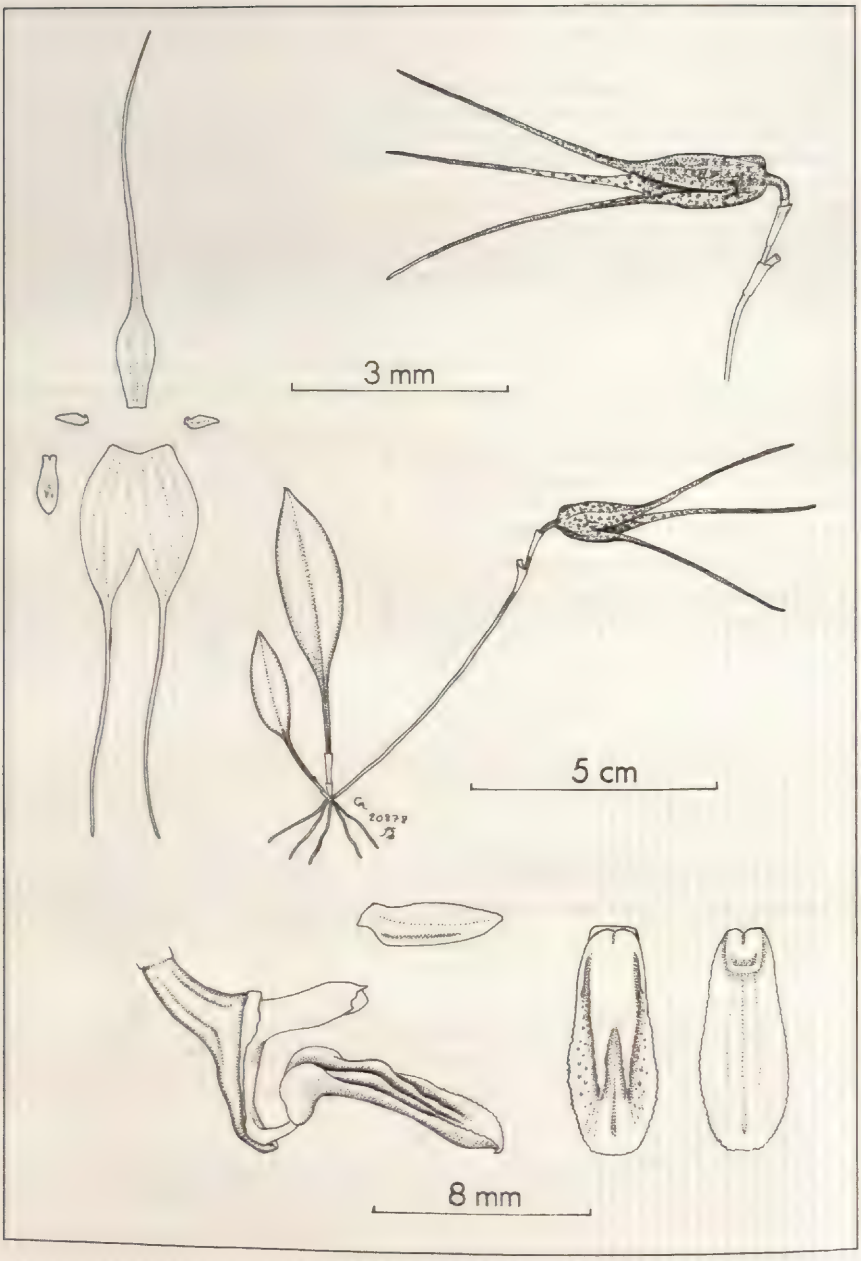


Plate 667. Masdevallia chaucae

Masdevallia hartman-filii Luer, Hirtz & V.N.M. Rao, sp. nov.

Ety.: Named for Hartman Mendoza, the son of the late Hartman Mendoza, who collected this species. The hyphenated epithet is deliberate, permitted by the Code, Art. 60.9.

Inter species *Masdevalliae* subsect. *Caudatae* Veitch planta parva, sepalis obtusis cum cauda plus minusve aequilongis, petalis oblongis cum dente basali retrorso et labello oblongo plano ad apicem callo parvo distinguitur.

Plant small, epiphytic, caespitose; roots fleshy. Ramicauls erect, stout, 13-15 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 4-5 cm long including a petiole ca. 1.5 cm long, the blade elliptical, obtuse, 9-11 mm wide, cuneate below into the petiole. **Inflorescence** a single flower produced by a slender, erect peduncle 3.5 cm long, with a bract on the lower quarter, from low on the ramicaul; floral bract tubular, 8 mm long; pedicel 13 mm long; ovary 3 mm long; **sepals** glabrous, the dorsal sepal white to rosy white, obovate, concave, 12 mm long, 8 mm wide, 3-veined, the apex round, contracted abruptly into a slender, white tail 13 mm long, connate 5.5 mm to the lateral sepals to form a sepaline cup, the lateral sepals white, suffused with rose, especially toward the base, ovate, oblique, acute, acuminate into white tails 13 mm long, similar to that of the dorsal sepal; **petals** white, oblong, 4.75 mm long, 2 mm wide, the truncate apex shallowly bilobulate, the labellar margin with a longitudinal callus ending in a thick, obtuse, retrorse process; **lip** rose, elliptical, thin, 4.5 mm long, 2.5 mm wide, the apex obtuse to rounded, with a small, rounded, midline, marginal callus, the disc featureless except for thickening at the rounded base, hinged beneath; **column** white, stout, semiterete, 4 mm long, the foot thick, equally long, with an incurved extension.

ECUADOR: **Loja**: without specific locality, collected by Hartman Mendoza, the son of the late Hartman Mendoza, obtained by A. Hirtz, flowered in cultivation in Wilmington, DE, Nov. 2004, *V.N.M. Rao 195* (Holotype: MO), C. Luer illustr. 20868.

Masdevallia hartman-filii was collected by the son of the late Hartman Mendoza, noted collector of orchids in southern Ecuador. Among the species of *Masdevallia* subsection *Caudatae*, this species is characterized by a small, white flower that is delicately suffused with pale rose, especially toward the bases of the sepals. The petals are white and oblong with a retrorse, basal tooth. The lip is rose, thin, and elliptical without other remarkable feature.

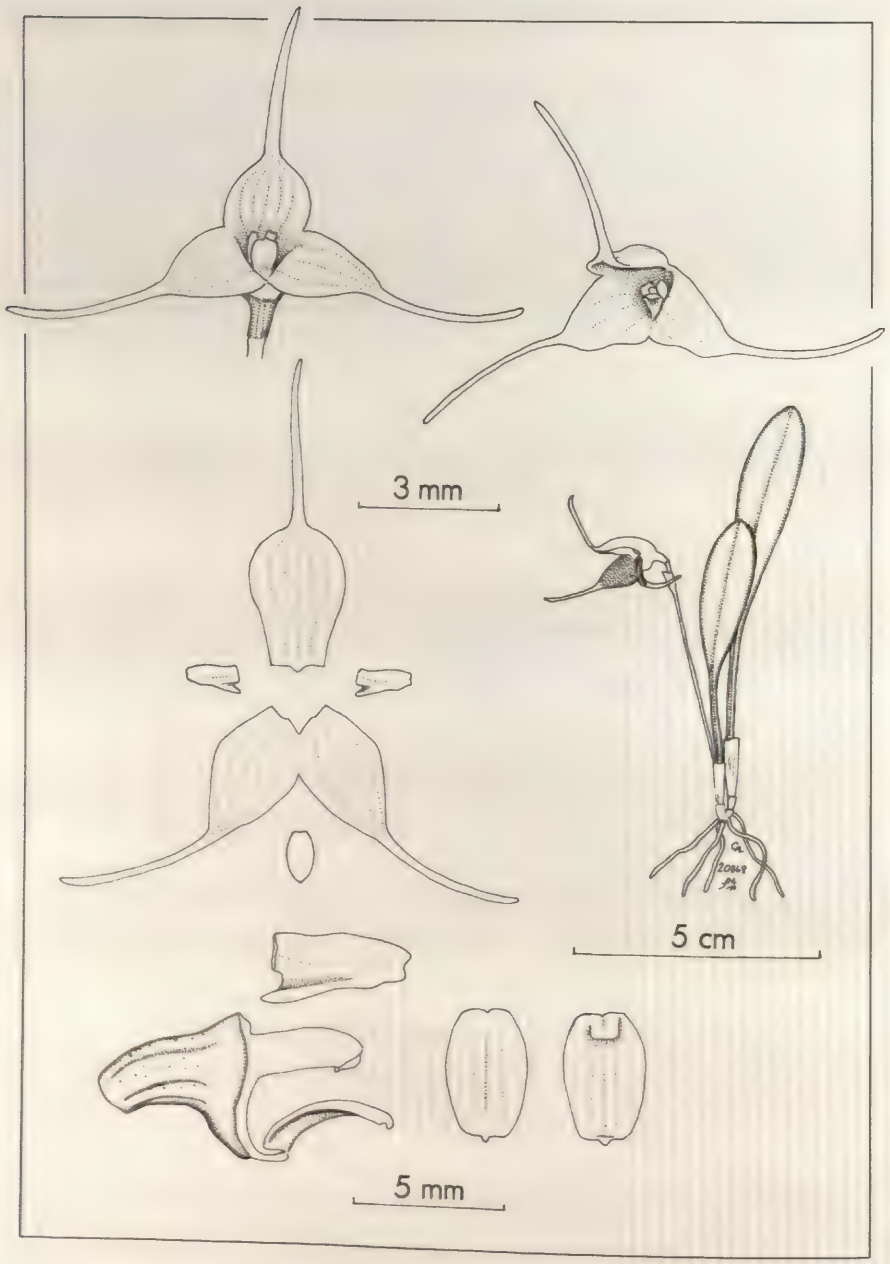


Plate 668. Masdevallia hartman-filii

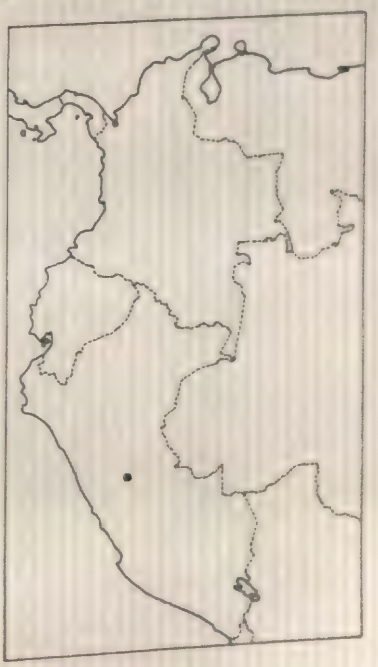
Masdevallia munae Luer & R.Barrow, sp. nov.

Ety.: Named for the community of Muna, Peru, where the species was collected.

Inter species *Masdevalliae* sect. *Polyanthae* subsect. *Alaticaules* Kraenzl. planta mediocris, sepalis lateralibus in synsepalum latum profunde connatis, caudis gracilis brevioribus, et labelli callis erectis distinguitur.

Plant medium in size for the section, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 4-5.5 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, 11-12 cm long including a petiole ca. 4 cm long, the blade narrowly elliptical-obovate, subacute, 1.5-2 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower produced successively in a few-flowered raceme, the peduncle triquetrous, 12 cm long, with a bract on the lower third, from low on the ramicaul; floral bract thin, tubular, 8 mm long; pedicel 12-14 mm long; ovary shallowly winged, 5 mm long; **sepals** glabrous, the dorsal sepal yellow, obovate, ca. 14 mm long, 8 mm wide, 3-veined, the apex obtuse, acuminate into a slender, erect, yellow-orange tail 2 cm long, connate to the lateral sepals for 8 mm to form a broad sepaline tube, the lateral sepals purple, connate 15 mm into a broadly oblong synsepal ca. 20 mm long, 20 mm wide, 6-veined, the apices distant, obtuse, contracted into slender, orange tails ca. 13 mm long; **petals** yellow, oblong, cartilaginous, 8 mm long, 2.25 mm wide, 1-veined, the apex subacute with an obscure marginal fold, the labellar half with a longitudinal callus, widest above the middle; **lip** purple, oblong, subpandurate, 8.5 mm long, 3.5 mm wide, divided above the middle by erect, finlike lamellae, the epichile oblong-ovate, rounded at the apex, with minutely rugose with erose margins, shallowly sulcate centrally, the hypochile oblong, cordate at the base, shallowly concave, hinged on the end; **column** semiterete, 6 mm long, the foot thick, 4 mm long.

PERU: **Huánuco**: near Huánuco, alt. 2400 m, collected by Saul Ruiz, Nov. 2003, purchased from M. Arias, cultivated by Royden Orchids, Great Missenden, England, *R. Barrow RO23* (Holotype: MO), C. Luer illustr. 20823.



Among the numerous species of *Masdevallia* subsect. *Alatacaules*, this species is characterized by a narrow, obscurely petiolate leaf, and a relatively slender peduncle shorter than the leaf. The flowers are produced successively in a loose raceme. Although the flower superficially appears similar to many others with a broad, cylindrical, sepaline tube, the lateral sepals are deeply connate into a broad synsepal with distant, obtuse apices that are contracted into shorter, slender tails. The petals are narrowly oblong. The folds near the middle of the lip stand erect like a pair of finlike lamellae.

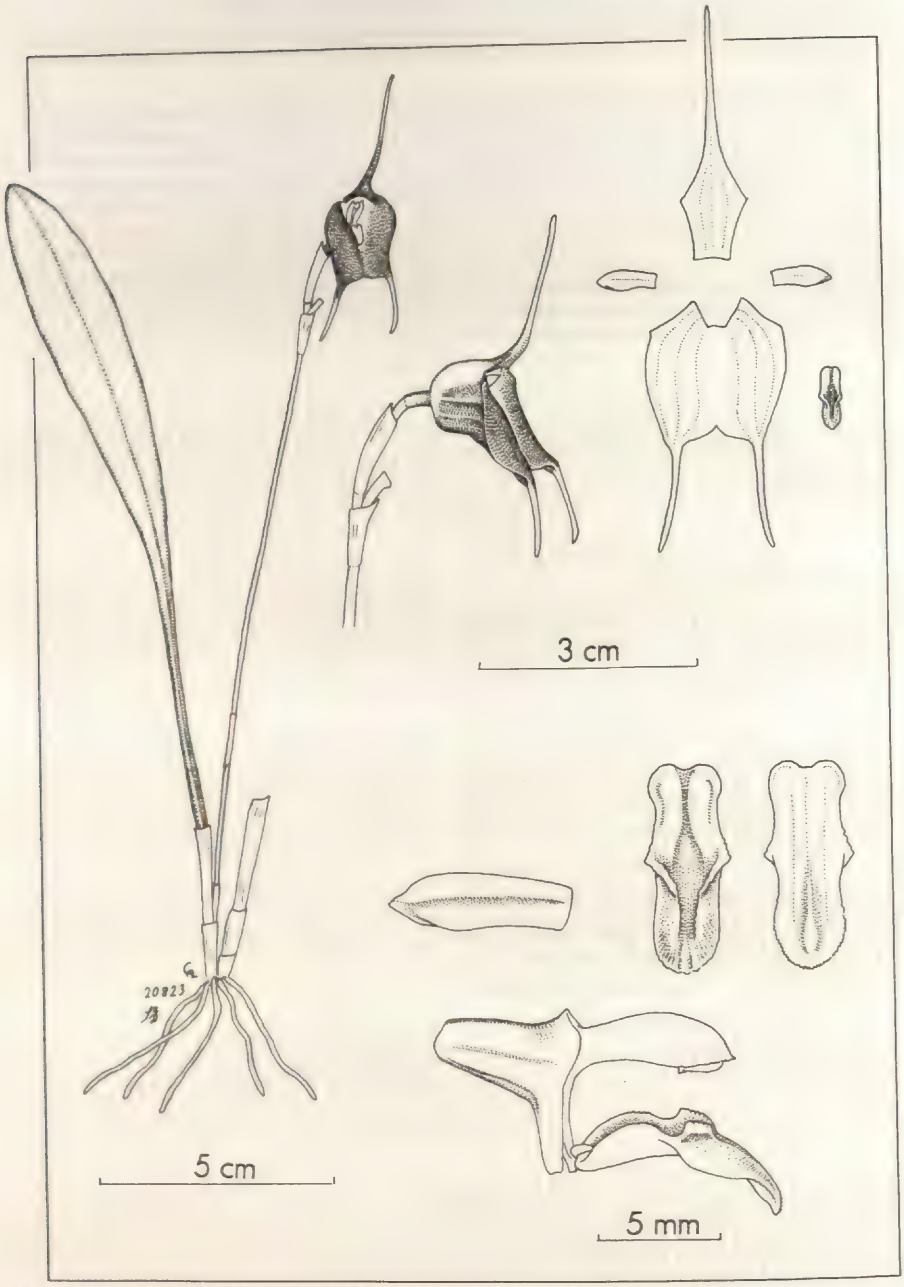


Plate 669. Masdevallia munae

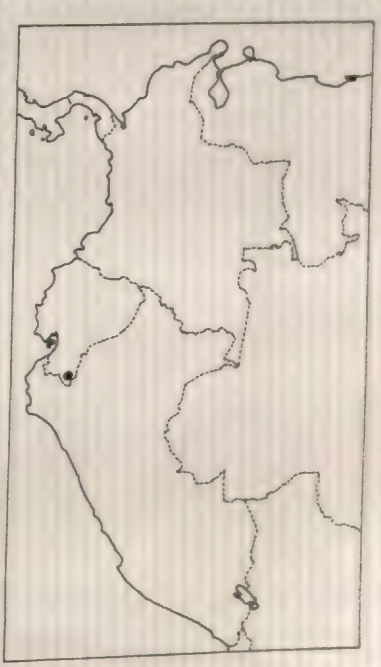
Masdevallia naevia Luer & V.N.M. Rao, sp. nov.

Ety.: From the Latin *naevius*, "with a birthmark," in allusion to the black mark on the dorsal sepal.

Inter species *Masdevalliae xanthinae* Rchb.f. et affinitates folia oblonga, flore lutescenti, sepalorum caudis crassis laminis leviter longioribus, ad basim caudae sepali dorsalis naevi negro, et labello pertenui elliptico pede columnae plus minusve aequilongo distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, stout, 5 cm long, enclosed by a loose, tubular sheaths and 2 others at the base. **Leaf** erect, coriaceous, 11 cm long including the petiole 3.5 cm long, the blade elliptical-oblong, obtuse, 2.2 cm wide, narrowly cuneate below into the petiole. **Inflorescence** a single flower produced by a slender, suberect peduncle 11 cm long, with a bract on the lower quarter, from low on the ramicaul; floral bract tubular, 12 mm long; pedicel 15 mm long; ovary 6 mm long; **sepals** glabrous, white, suffused with rose, the dorsal sepal oblong-obovate, carinate, concave, arcuate-cucullate, 17 mm long, 8 mm wide expanded, 5-veined, connate to the lateral sepals for 4 mm to form a shallow sepaline cup, the apex thick, rounded, contracted into a stout forwardly directed tail 3 cm long, the base of the tail and the adjacent dorsal sepal heavily suffused with purple-black, the lateral sepals ovate, oblique, 13 mm long, 10 mm wide, connate basally for 5 mm, the apices obtuse, contracted into thick tails 2.5 cm long; **petals** white, oblong, oblique, 6 mm long, 3-4 mm wide at the base with the callus, the truncate apex shallowly lobulate, the labellar margin with a longitudinal callus ending in a thickened, obtuse, retrorse process; **lip** white, thin, elliptical, 5.5 mm long, 3.5 mm wide, the rounded without a callus, the disc featureless; **column** white, stout, semiterete, 6 mm long, the foot equally long, with a short, incurved extension.

ECUADOR: **Zamora-Chinchipe**: between Jimbura and Zumba, alt. 2000 m, obtained from Ecuagenera, cultivated in Wilmington, DE, May 2004, *V.N.M. Rao 180* (Holotype: MO), C. Luer illustr. 20806.



This species is another in the horde of species related to *Masdevallia xanthina*. The most distinguishing feature is the conspicuous, black spot covering the base of the tail of the dorsal sepal and adjacent portion of the blade.

Vegetatively, *Masdevallia naevia* is characterized by larger, oblong leaves, and a longer peduncle. The dorsal sepal is longer with the distal third concave, and with the thickened tail pointing forward. As with the others, the marginal callus of the petals is thick with a retrorse process at the base. The lip is elliptical, thin and featureless on the disc, and at the apex.

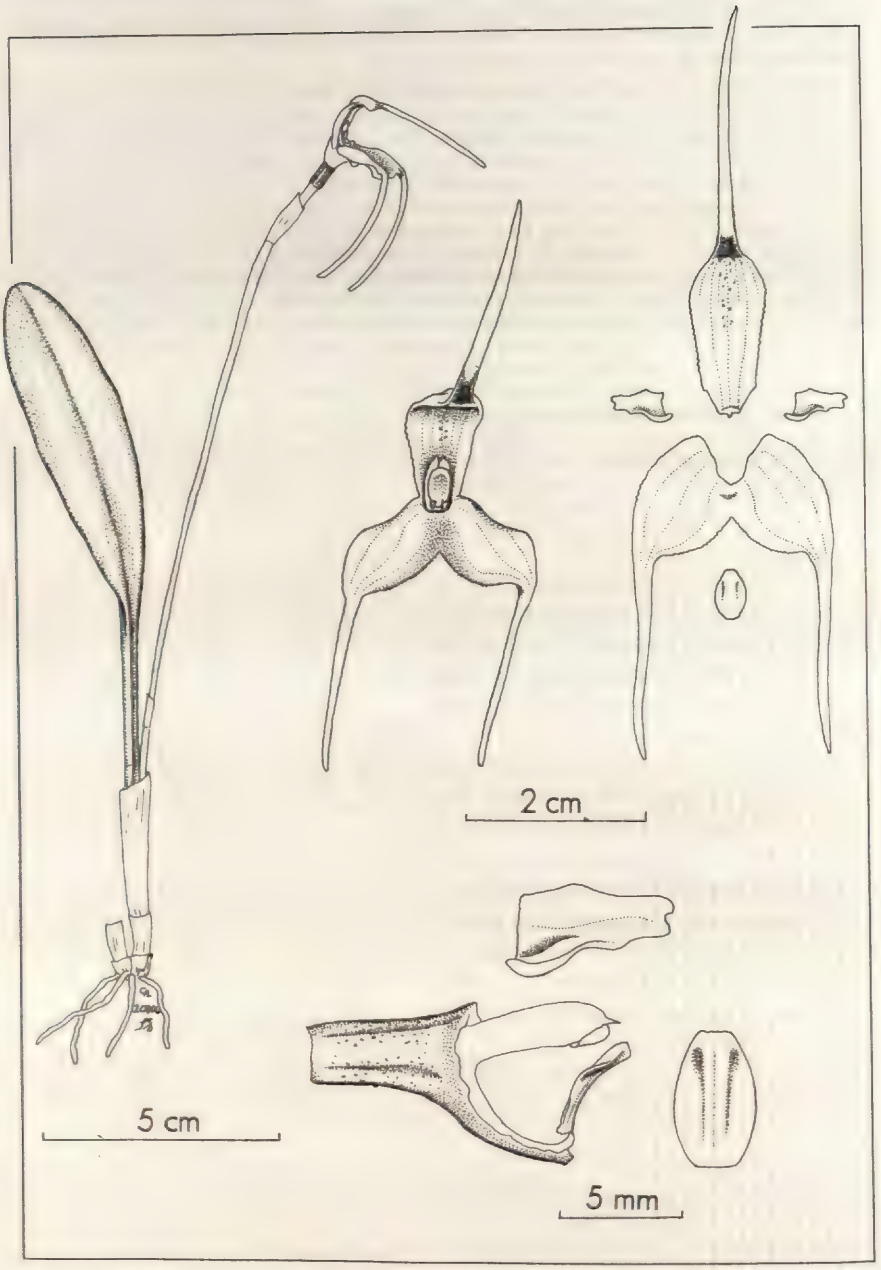


Plate 670. Masdevallia naevia

Masdevallia phoebe Luer & Hirtz, sp. nov.

Ety.: Named for Phoebe, the Greek goddess of the moon, referring to the large, rounded, orangish synsepal.

Inter species *Masdevalliae* sect. *Polyanthae* subsect. *Alaticaules* Kraenzl. planta parva, sepalis lateralibus in synsepalum suborbiculatum profunde connatis, caudis brevissimus, et labelli epichilio oblongo marginibus revolutis distinguitur.

Plant small in size for the section, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 1.5-2 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, 7-9 cm long including an indistinct petiole ca. 1 cm long, the blade narrowly elliptical-obovate, subacute, 1.3-1.5 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower produced successively in a few-flowered, congested raceme, the peduncle slender, triquetrous, 8-10 cm long, with a bract at the base, from low on the ramicaul; floral bract thin, tubular, 12-14 mm long; pedicel 6-8 mm long; ovary 4 mm long; **sepals** orange or light orange-brown, microscopically verrucose within, glabrous externally, the dorsal sepal narrowly triangular, directed forward over the synsepal, 27 mm long, 7 mm wide at the base, 3-veined, the apex acute, acuminate, connate to the lateral sepals for 3 mm to form a short, sepaline tube, the lateral sepals connate 18 mm into a suborbicular synsepal 18 mm long, 20 mm wide, 6-veined, with a broadly rounded mentum, the apices obtuse, contracted into short, thick tails 3 mm long; **petals** light yellow, oblong, cartilaginous, 6.25 mm long, 1.75 mm wide, 1-veined, the apex truncate, with an obscure marginal fold, the labellar margin with a longitudinal callus, with a thick, descending process at the base; **lip** brown, subpandurate, 6 mm long, divided above the middle by irregular, marginal folds, the epichile tubular-oblong, rounded at the apex, with the margins revolute, 2.5 mm long, 1.3 mm wide, the hypochile oblong, 3.5 mm long, 2.5 mm wide, the base truncate, hinged on the end; **column** semiterete, 4.5 mm long, the foot thick, 3 mm long, with a short extension.

ECUADOR: **Zamora-Chinchipe**: Cordillera del Condor, Mayaicu, alt. 1200 m, collected by Ecuagenera, Gualaceo, flowered in cultivation 27 July 2004, *A. Hirtz 8900* (Holotype: MO), C. Luer illustr. 20875.

Another of the many species of *Masdevallia* subsection *Alatacaules*, this species is distinguished by the small habit, a narrow, obscurely petiolate leaf, and a relatively slender peduncle about as long as the leaf. The flowers are produced successsively in a short raceme. Most apparent is the broadly expanded, orbicular synsepal with a pair of tiny tails, and overlain by an elongated dorsal sepal. The petals bear a short, thick tooth at the base. The lip is divided into a narrow, tubular epichile, and a twice broader, oblong hypochile.

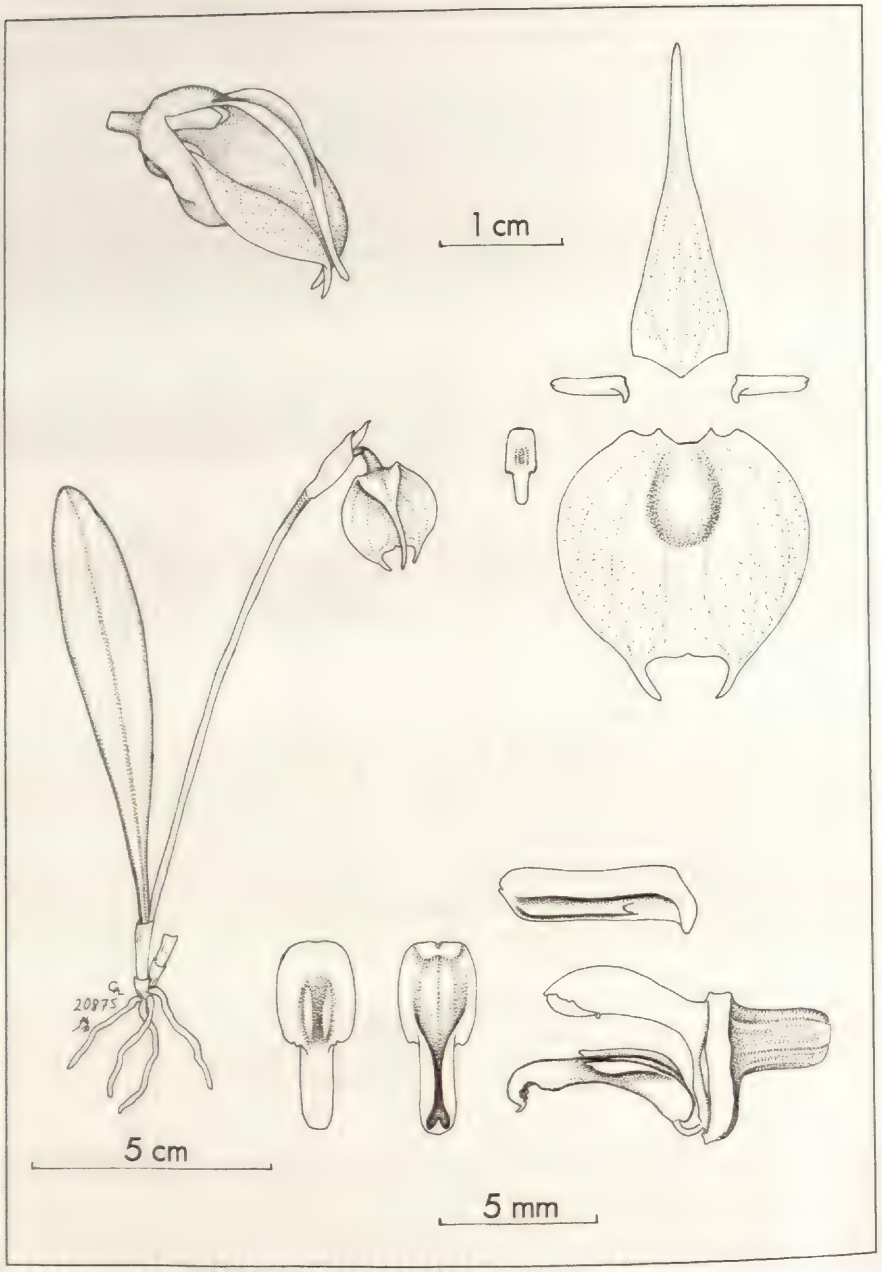


Plate 671. Masdevallia phoebe

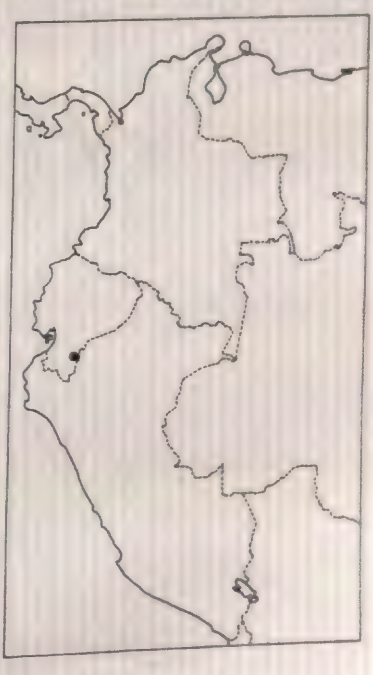
Masdevallia priscillana Luer, V.N.M. Rao, sp. nov.

Ety.: Named for Priscilla de Portilla, wife of Ivan Portilla, collector of this species.

Inter species *Masdevalliae* sect. *Polyanthae* subsect. *Alaticaules* Kraenzl. planta mediocris, sepalis crassis, sepalo dorsali profunde connato, lateralibus latis non expansis cum caudis crassissimis distinguitur.

Plant medium in size for the section, epiphytic, caespitose; roots coarse. Ramicauls erect, slender, 1-1.5 cm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, 10 cm long including a petiole ca. 1.5 cm long, the blade narrowly elliptical, subacute, 2 cm wide, cuneate below into the petiole. **Inflorescence** a single flower produced successively in an abbreviated, congested raceme, the peduncle triquetrous, stout above, 13 cm long, with a bract near the base, from low on the ramicaul; floral bract thin, tubular, 7-9 mm long; pedicel ca. 7 mm long; ovary shallowly winged, 7 mm long; **sepals** fleshy, rigid, glabrous, the dorsal sepal yellowish, elliptical, concave, obtuse, antrorse, 13 mm long, 6.5 mm wide, 3-veined, the apex obtuse, contracted into a thick, suberect tail 2 cm long, connate to the lateral sepals for 11 mm, the lateral sepals purple, elliptical, 30 mm long including the tails, connate 21 mm, to form with the dorsal sepal a more or less ovoid, sepaline tube, with a shallow mentum, 17 mm wide together, each 3-veined, the subacute apices contracted into thick, forwardly directed, tapering tails 2 cm long; **petals** white, narrowly ovate, cartilaginous, 7 mm long, 2.25 mm wide below the middle, 1-veined, the apex narrowly obtuse, shallowly bilobed, the labellar half longitudinally callous, ending in a low, rounded callus at the base; **lip** spotted with purple, oblong, subpandurate, 7.5 mm long, 3 mm wide, divided above the middle into an ovate, trilobulate epichile, shallowly sulcate centrally, the hypochile oblong, truncate, hinged beneath; **column** semiterete, 8 mm long, the foot thick, 2 mm long.

ECUADOR: **Zamora-Chinchipe**: collected by Ivan Portilla, cultivated by Ecuagenera, Gualaceo, flowered in cultivation in Wilmington, DE, Feb. 2004, *V.N.M. Rao 165* (Holotype: MO), C. Luer illustr. 20555.



Among the numerous species of *Masdevallia* section *Alaticaules*, this species is characterized by a stout peduncle that exceeds the leaf in length. The flowers are produced successively in a very short, congested raceme, with the pedicel no longer than the floral bract. Although the flower superficially appears similar to those of species related to *M. bicolor*, the sepals are fleshy rigid and deeply connate into an obovoid flower. The tails of the lateral sepals are short, thick, and directed forward. The petals are narrowly ovate, and the lip is trilobulate at the apex.

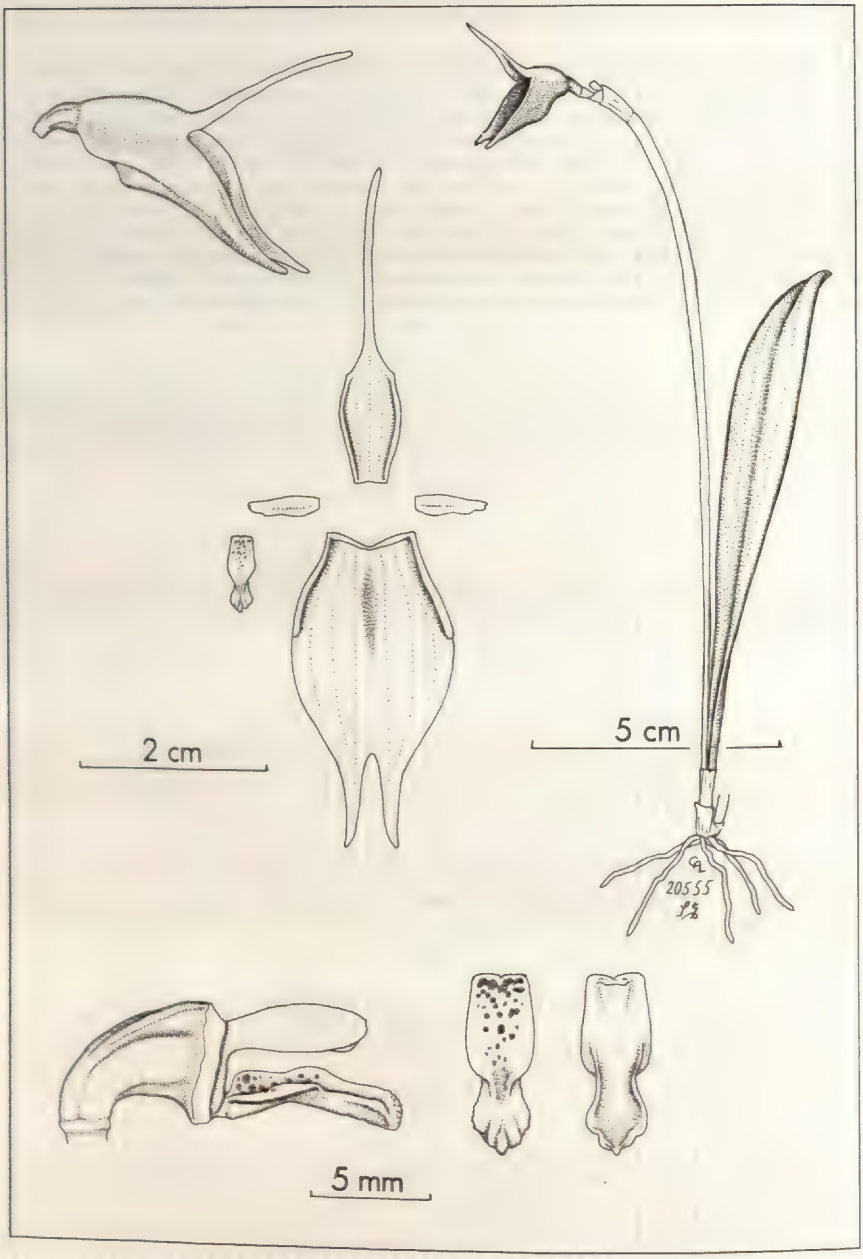


Plate 672. Masdevallia priscellana

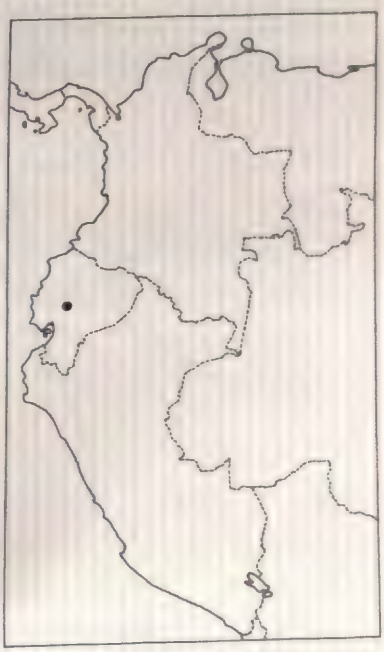
Masdevallia superbiens Luer & Hirtz, sp. nov.

Ety.: From the Latin *superbiens*, "superb," for the distinguished species.

Species haec *Masdevalliae dalstroemii* Luer affinis, sed sepalis non papillosis, sepalo dorsali suborbiculato concavo, petalis acutis et labelli epichilio subplano orbiculato latiore differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls stout, 5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 15 cm long including the petiole 5 cm long, the blade elliptical, subacute to obtuse, 3 cm wide, cuneate below into the slender petiole. **Inflorescence** a loose, simultaneously several-flowered raceme up to 24 cm long, including the stout, erect peduncle 15-18 cm long, with a bract on the lower third, from low on the ramicaul; floral bract inflated, 5-6 mm long; pedicel 1.5 mm long; ovary 3 mm long, 2.5 mm wide, with undulate carinae; **sepals** white, finely spotted with red-purple, minutely and sparsely ciliate, otherwise glabrous, the dorsal sepal suborbicular, concave, carinate, 13 mm long, 13 mm wide expanded, connate to the lateral sepals for 4 mm to form a gaping, sepaline cup, the round apex contracted into a slender, yellow tail, 20 mm long, the lateral sepals elliptical, 13 mm long, 5 mm wide, connate 2 mm, the apices acute, contracted into similar tails 22 mm long; **petals** white, oblong, 4.5 mm long, 2 mm wide, the apex acute, the margins denticulate, the labellar half with a longitudinal carina; **lip** yellow, oblong-subpandurate, 5 mm long, 2 mm wide, slightly constricted in the distal quarter with the epichile rounded, the hypochile oblong, the base thick, truncate, hinged beneath; **column** white, semiterete, 4 mm long, the foot thick with a short, incurved extension.

ECUADOR: **Bolívar**: epiphytic "above Chillanes," alt. 2800 m, collected by Ecuagenera, cultivated by Ecuagenera, Gualaceo, flowered in cultivation 27 July 2004, *A. Hirtz 8904* (Holotype: MO), C. Luer illustr. 20874.



This handsome species is superficially similar to *Masdevallia dalstroemii*, and was reportedly collected at a high altitude above Chillanes in south-central Ecuador, the same general area where *M. dalstroemii* occurs.

The flowers of *Masdevallia superbiens* are white with red-purple spots, and transverse bars on the sepals near the margins. The dorsal sepal is round, concave and much wider than that of *M. dalstroemii*. The petals are sharply acute, and the epichile of the lip is round, wider than the hypochile and not recurved.

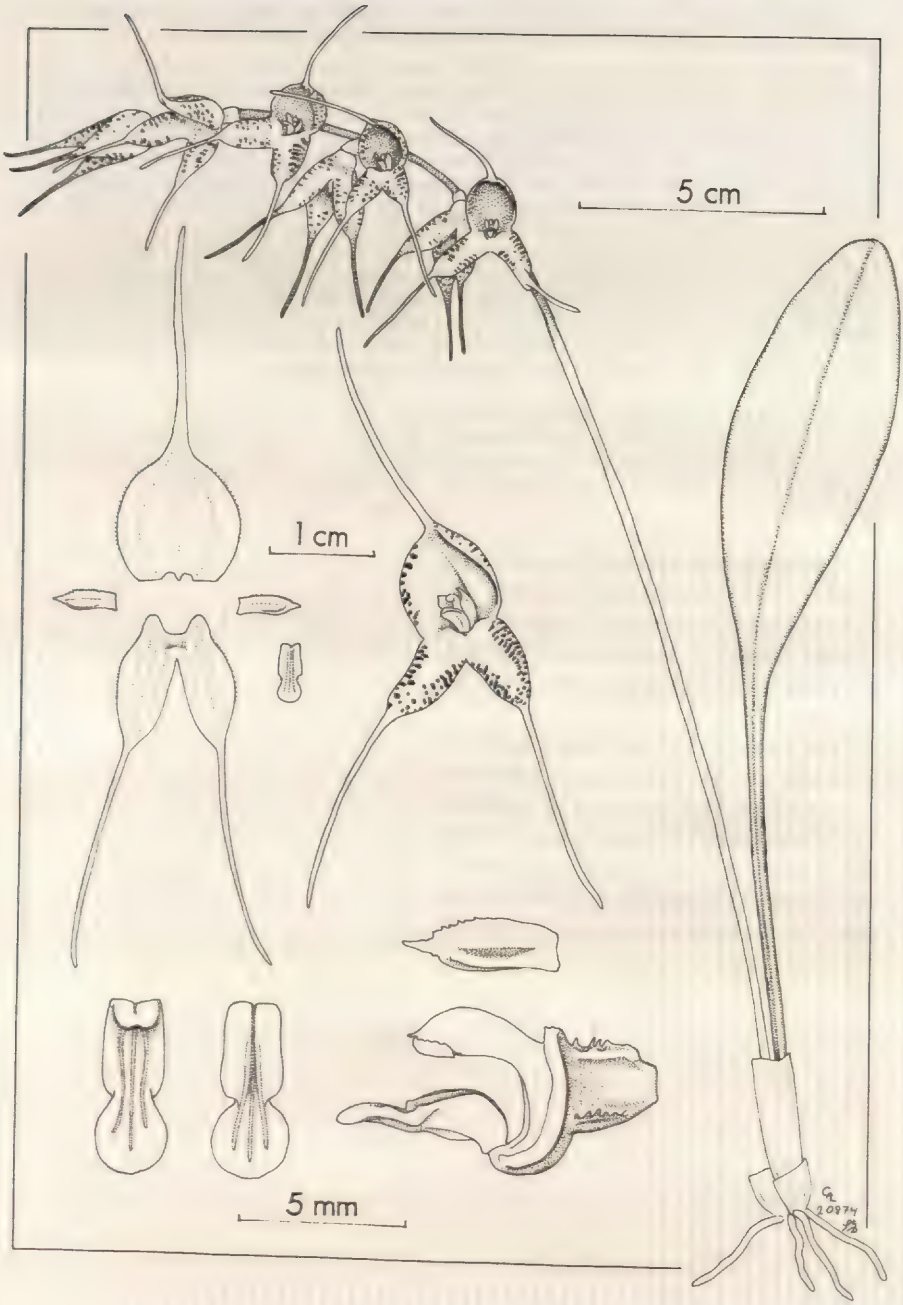


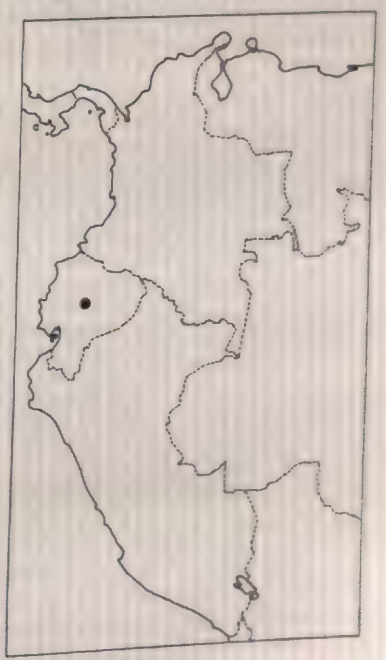
Plate 673. Masdevallia superbiens

Masdevallia telloi Luer & Hirtz, sp. nov.

Ety.: Named for Omar Tello of Puyo, Ecuador, original collector of the plant, and cultivator of this species.

Species haec *Masdevalliae bicolori* Poepp. & Endl. affinis, sed pedunculo graciliore longioreque, racemo multifloro etiam longiore, et sepalis expansis cum caudis crassissimis differt.

Plant small in size for the section, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 1-1.5 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, 6-9 cm long including an indistinct petiole 1-2.5 cm long, the blade narrowly elliptical-obovate, subacute, 1-1.4 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower produced successively in a congested, several- to many-flowered raceme, the peduncle slender, triquetrous, 9-11 cm long, with a bract at the base, from low on the ramicaul; florals bract thin, tubular, imbricating, 9-10 mm long; pedicel 7-10 mm long; ovary 4-5 mm long; **sepals** glabrous, the dorsal sepal yellow, narrowly ovate, directed forward, 20 mm long, 5.5 mm wide at the base, 3-veined, contracted into a thick, yellow apex or tail, 2 mm broad, connate to the lateral sepals for 3 mm to form a short, sepaline tube, the lateral sepals rose-purple, connate 9 mm into a bifid synsepal 18 mm long, 11 mm wide, 6-veined, with a shallow mentum, the apices obtuse, contracted into thick apices or tails ca. 5 mm long, 2 mm broad; **petals** rose, oblong, cartilaginous, 5 mm long, 1-1.5 mm wide, 1-veined, the apex truncate, apiculate, the labellar margin with a longitudinal carina ending in a thick, rounded callus at the base; **lip** rose, subpandurate, 4.5 mm long, 2 mm wide, divided above the middle by oblique, marginal folds, the epichile oblong, obtuse at the apex, with the margins minutely serrated, the base bilobulate, hinged on the end; **column** semiterete, 4 mm long, the foot thick, 3 mm long, with a short extension.



ECUADOR: **Pastaza**: Palora, alt. 700 m, collected near Puyo by Omar Tello, s.n., flowered in cultivation by him in Puyo, June 2004, *A. Hirtz 8782* (Holotype: MO), C. Luer illustr. 20876.

This species is related to the variable *Masdevallia bicolor* and its numerous relatives, but it differs from them by a slender habit with a slender, proportionately much longer peduncle. The numerous flowers are produced successively in a congested raceme over a long period of time.

With a yellow dorsal sepal and a purplish synsepal, the flowers of this species are basically similar to those of *M. bicolor*. The sepaline tails, however, are much thicker. The lateral sepals expand immediately beyond the junction with the dorsal sepal instead of making a concave synsepal. The petals and lip are not remarkably different, except that the apex of the lip is not verrucose.

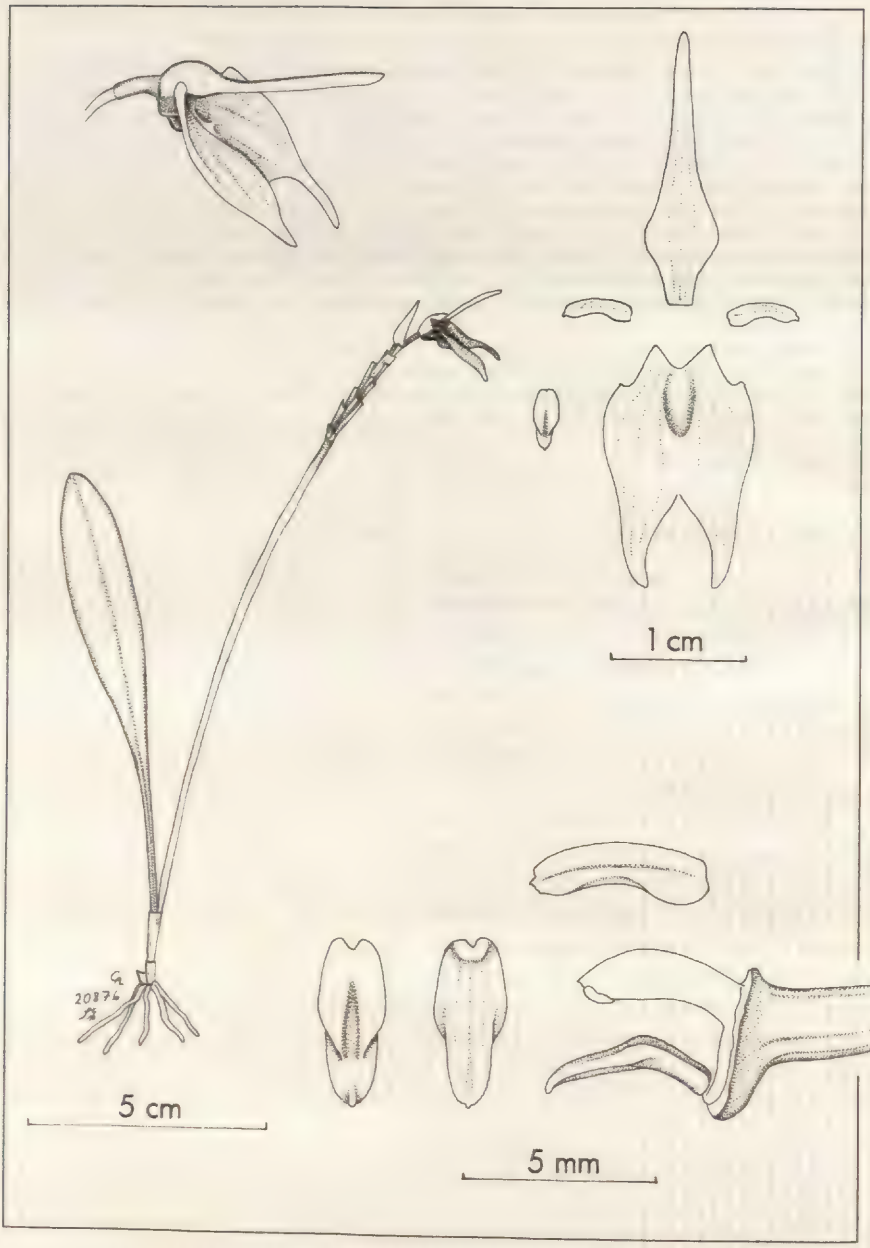


Plate 674. Masdevallia telloi

NEW SPECIES OF *LEPANTHES* FROM ECUADOR

LOUIS J. JOST

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New species:
Lepanthes mayordomoensis L.J.Jost & Luer
Lepanthes ornithocephala L.J.Jost & Luer
Lepanthes pseudomucromata L.J.Jost & Luer
Lepanthes spruceana L.J.Jost & Luer

Lepanthes mayordomoensis L.J.Jost & Luer, sp. nov.

Ety.: Named for Cerro Mayordomo where this species was found.

Species haec *Lepanthedis tungurahuae* Luer & Hirtz similis, sed labelli laminis alaformibus, et appendice ad apicem longibidentata differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, x-x cm long, enclosed by 6-9 tightly fitting, sparsely ciliate, dark gray lepanthiform sheaths, with ostia abruptly dilated. **Leaf** suberect, thinly coriaceous, elliptical, acute-acuminate, 4-5 cm long, 2-2.5cm wide, the round base sharply contracted into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 1 cm long, borne beneath the leaf by a filiform peduncle up to 1.3 cm long; floral bract 0.7 mm long: pedicel 0.7 mm long; ovary 2 mm long, carinate; **sepals** white, glabrous, the dorsal sepal triangular, acute, 8.6 mm long, 4.6 mm wide, connate to the lateral sepals for 1.4 mm, the lateral sepals ovate, oblique, acute, oblique, 7.9 mm long, 3.6 mm wide, connate for 2.9 mm; **petals** yellow suffused red on margins, transversely bilobed, minutely pubescent, 1.4 mm long, 4 mm wide, the upper lobe triangular-oblong, the apex obliquely narrowed, the lower lobe shorter, triangular; **lip** golden-yellow, bilaminate, the blades broadly flattened into triangular wings, microscopically pubescent, 1.7 mm long with acute incurved apices and broad rounded bases, embracing the column, the connectives broad, from the basal halves of the blades, the body broad, ciliate, connate to the column only at the base; the appendix a triangular flap with two elongate, slightly down curved apical lobes swollen at their tips, pilose, with a pubescent prong below the flap, midpoint of flap adnate to the column; **column** 2.1 mm long, the anther dorsal, the stigma ventral.

ECUADOR: **Tungurahua:** epiphytic in cloud forest on Cerro Mayordomo, alt. 2800m, 6 Jan. 2002, *L. Jost, R. Kunstaetter & D. Kunstaetter 3742* (Holotype: MO; Isotypes: QCNE, QCA).

This species closely resembles sympatric *Lepanthes tungurahuae*, but is immediately distinguished by the winglike blades of the lip. The pincer-like bilobed apex of the appendix is also distinctive. The species is apparently rare, since only one plant was found in an area that has been intensively searched for *Lepanthes* on several previous occasions.

Lepanthes ornithocephala L.J.Jost & Luer, sp. nov.

Ety.: From Greek *ornithocephalus*, "bird-headed" in reference to the shape of the appendix.

Species haec *Lepanthedis benzingii* Luer similis, sed petalorum lobis superioribus late rotundatis, labelli connectivis brevioribus, et appendice pedunculata ornithocephala differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls very slender, pendant, 5-8 cm long, enclosed by 5-7 tightly fitting, sparsely short-ciliate, dark lepanthiform sheaths. **Leaf** pendant, erect with respect to ramicaul, coriaceous, elliptical-ovate, short-acuminate, green suffused with red, 3-4 cm long, 2.1-2.7 cm wide, the base sharply contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 2.5 cm long, borne beneath the leaf by a filiform

peduncle up to 1 cm long; floral bract 0.6 mm long, muricate: pedicel 2.1 mm long; ovary 3.3 mm long; **sepals** yellow, glabrous, the dorsal sepal triangular-ovate, obtuse, 2.7 mm long, 2.1 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals ovate, connate 1.5 mm into a transversely ovate, bifid lamina 1.8 mm long, 2.3 mm wide, the apices acute, free for 0.4 mm; **petals** orange, suffused with red, transversely bilobed, minutely cellular-glandular, 1 mm long, 3.1 mm wide, the upper lobe round, the lower lobe narrower, rectangular-oblong; **lip** red, bilaminate, the blades narrowly oblong, 1.9 mm long with truncate down curved bases, embracing the column, the connectives from the middle of the blades, the body thin, each half with a long-pubescent region on the inner surface adjacent to the appendix, the appendix very large, oblong, concave, short-pubescent, bearing a beaked, hooded, long-pubescent sphere at apex; **column** 1.8 mm long, the anther dorsal, the stigma ventral.

ECUADOR: **Tungurahua:** epiphytic in cloud forest above Rio Anzu, alt. 1560m, 1 March 2001, *L. Jost, S. Dalstrom 2951* (Holotype: QCNE; Isotypes: MO, QCA).
Napo: epiphytic in cloud forest on the Galeras mountains, alt. 1670m, 4 March 2003, *L. Jost, H. Vargas, Tania Delgado et al. 5356* (Paratype: QCNE).

In the field, this species looks exactly like *Lepanthes benzingii*, with the same pendant habit, similarly slender ramicauls and shape of leaves. The flower colors are also identical. However, the floral details are very different; this species has much broader, rounder petals than *L. benzingii*, and a relatively longer column and lip. Most distinctive is the elaborate appendix, resembling a hooded bird skull on a long strap. Although this species grows in the same general area in Ecuador as *L. benzingii*, it occurs at slightly higher elevations than that species.

Lepanthes pseudomucronata L.J.Jost & Luer, sp. nov.
Ety.: Named for the resemblance of the species to *Lepanthes mucronata* Lindl.

Species haec *Lepanthedis mucronatae* Lindl. variatio angustifoliaris similis, sed petalorum marginibus longipubescentibus, et appendice late-elongato cum lobo apicali breve distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 7-11 cm long, enclosed by 8-11 tightly fitting, brown lepanthiform sheaths. **Leaf** suberect, thinly coriaceous, narrowly elliptical, acuminate, 5-7 cm long, 7 to 9 mm wide, the acute base sharply contracted into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 10 mm long, borne along the midrib on the dorsal surface of the leaf by a dimorphic filiform peduncle, either 3-6 mm long or 20-25 mm long, both types of peduncle usually present on each leaf; floral bract 1 mm long, membranaceous; pedicel 3 mm long; ovary 1.5 mm long; **sepals** dull salmon, minutely denticulate, the dorsal sepal transversely ovate, acute, 4.1 mm long, 3.9 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, connate 2 mm into an ovate, bifid lamina 3.9 mm long, 4.4 mm wide, the apices acute, oblique, free for 1.3 mm; **petals** dull salmon and yellow suffused brown and dull green, transversely bilobed, with a slender marginal lobe, the upper lobe minutely pubescent, 1.8 mm long, 2 mm wide, oblong, truncate, the angles shortly acuminate, the marginal process minutely pubescent, 0.8 mm long, the lower lobe long-pubescent along margins, 0.9 mm long, 1.7 mm wide, oblong-triangular, acute; **lip** yellow suffused dull purple-brown, bilaminate, the blades oblong-ovate, thin, 1.7 mm long with rounded ends, embracing and covering the column, the connectives cuneate from the basal halves of the blades, the body small, microscopically pubescent, the appendix comparatively large, pubescent, canoe-shaped, with a small terminal lobe; **column** 1.4 mm long, the anther dorsal, the stigma ventral.

ECUADOR: **Tungurahua:** epiphytic in cloud forest above Cashurcu, alt. 2200m, 9 Dec. 2000, *L. Jost 2493* (Holotype: QCNE; Isotypes: MO, QCA); same site and date, *L. Jost 2494* (QCA), *L. Jost 2495* (QCA); headwaters of the Rio Zuñac, alt. 2160 m, 26 Nov. 2001, *L. Jost, D. Neill, S. Ludlum et al. 3460* (QCA).

This species is very similar to the common and variable *Lepanthes mucronata*. Had it been known from only a single specimen, one would have been tempted to treat it as a variation of that species. However, several large populations of this species have been found in the Sacha Llanganates mountains of east-central Ecuador, and typical *L. mucronata* has also been found growing in some of the same sites (e.g. *L. Jost 2511*, QCA), and there is no intergradation between the two species. *Lepanthes pseudomucronata* can be distinguished from sympatric varia-

tions of *L. mucronata* by the broader flowers and the much more pubescent petals, including the marginal process and especially the lower lobe, which has relatively long hairs on its margin. The marginal process of this species does not extend beyond the margin of the sepals. The appendix is larger and more concave than that of *L. mucronata*.

Lepanthes spruceana L.J.Jost & Luer, sp. nov.

Ety.: Named for Richard Spruce, English Bryobotanist, who made extensive collections of mosses and vascular plants. He crossed the Cordillera Abitagua in eastern Ecuador in 1857 during his epic journey across South America. He wrote* "There is one mountain, called Abitagua, which though not more than 5000 feet high is continually enveloped in mists and rains. The trees on it, even to the topmost leaves, are so thickly encased in mosses that a recognizable specimen of them would be scarcely procurable."

* Notes of a Botanist on the Amazon and Andes, edited by A.R. WAllace, Macmillan, London: 177, 1908. (in a letter to George Bentham)

Ed. note "(Luer)": Jost made an effort to locate and explore the mountain, and found it to be very rich with at least 35 species of LEPANTHES, *including the four new species described here.*

Species haec *Lepanthedis zunagensis* Luer & Hirtz similis, sed petalorum lobis longioribus marginibus longipubescentibus, et appendice integro ascending, simple, scoop-shaped appendix.

Plant small in size, epiphytic, caespitose; roots slender. Ramicauls slender, pendant, 3-6 cm long, enclosed by 7-11 scabrous-ciliate, much-dilated, tan lepanthiform sheaths. **Leaf** erect with respect to ramicaul, thinly coriaceous, flushed purple beneath, narrowly elliptical, long-acuminate, 3 cm long, 0.8 cm wide, the round base sharply contracted into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 5 mm long, borne on the dorsal surface of the leaf along the midvein by dimorphic filiform peduncles either 3 mm long or 10 mm long; floral bract 1 mm long, sparsely muricate; pedicel 1.6 mm long; ovary 1 mm long; **sepals** dull purple, glossy, minutely denticulate, the dorsal sepal ovate, acute, 3.75 mm long, 3 mm wide, connate to the lateral sepals for 0.8 mm, the lateral sepals ovate, oblique, 3 mm long, 2 mm wide, connate 1.6 mm, the apices acute; **petals** orange-red, transversely bilobed, long-pubescent on the margins, 0.8 mm long, 5.8 mm wide, the lobes approximately equal, the upper lobe triangular-oblong, acute, the lower lobe subfalcate, acute; **lip** red, bilaminate, the blades fusiform, rounded at base, tapered and incurved at apex, 1.6 mm long, embracing the column, the connectives obliquely cuneate from the middle of the blades, the body narrow, the appendix broadly triangular with a thick terminal lobule and a dense patch of cilia on the undersurface, originating from a deep sinus and protruding upward toward the stigma; **column** 1.25 mm long, the anther dorsal, the stigma ventral.

ECUADOR: **Tungurahua:** epiphytic in cloud forest in the Sacha Llanganates, alt. 2200m, 1 Dec 2001, *L. Jost, D. Neill, S. Ludlum 3580* (Holotype: MO; Isotypes: QCNE, QCA).

This is one of about half a dozen sympatric species with similar habits and flowers, including *Lepanthes urotepala* Lindl., *L. zunagensis*, and several more undescribed ones, all growing together in the remote Sacha Llanganates mountains of eastern Ecuador at elevations of 2000-2300 m. *Lepanthes spruceana* is easily distinguished from the others by the long-ciliate margins of the petals. The appendix is also distinctive, originating from a very deep sinus and held almost vertically, so that its base is hidden by the side lobes of the lip. Only one example of this species could be found in spite of extensive searching.

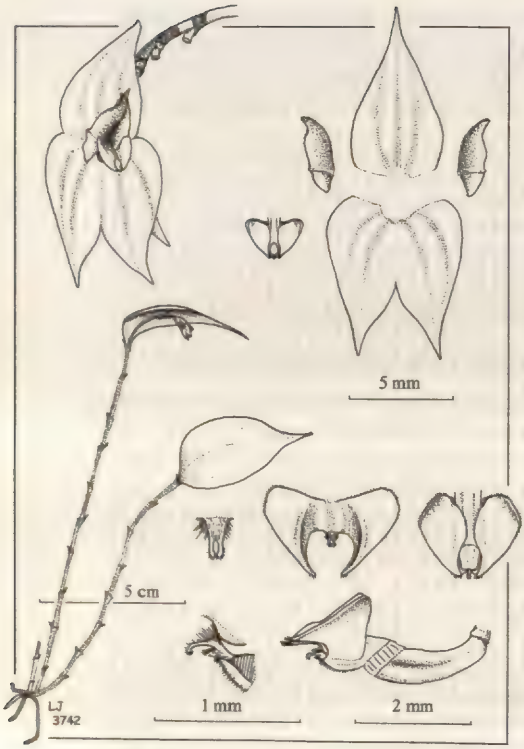

Fig. 1. Lepanthes mayordomoensis

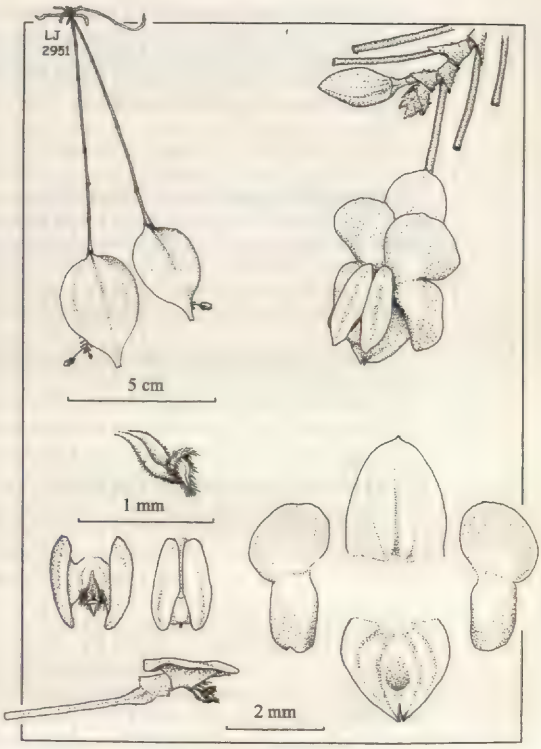

Fig. 2. Lepanthes ornithocephala

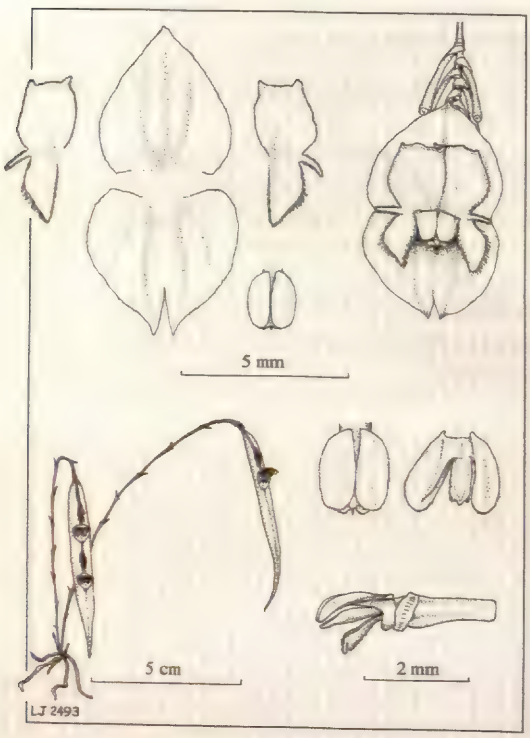

Fig. 3. Lepanthes pseudomucronata

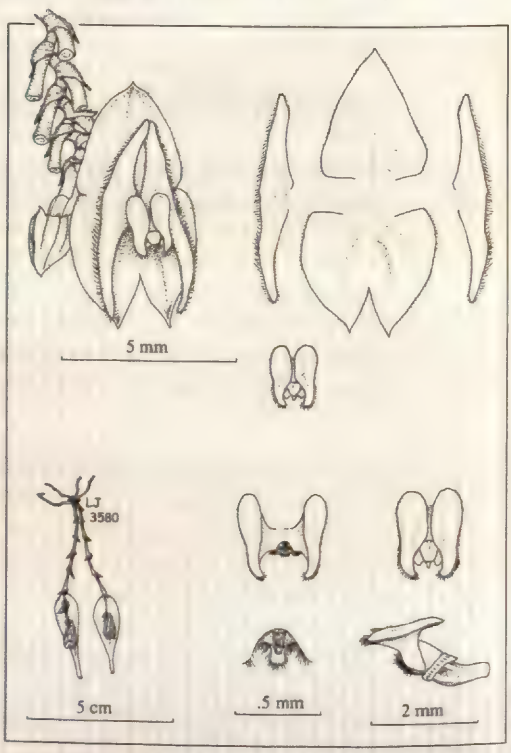

Fig. 4. Lepanthes spruceana

MISCELLANEOUS NEW TAXA AND COMBINATIONS:

Brachycladium (Luer) Luer, gen. et stat. nov.
Bas.: *Lepanthes* subgen. *Brachycladium* Luer, Monogr. Syst. Bot. 15: 31, 1986.
Type: *Lepanthes nummularia* Rchb.f.
Syn.: *Lepanthes* subgen. *Brachycladium* sect. *Brachycladae* Rchb.f.

This taxon with 34 species was treated as a subgenus of *Lepanthes* Sw. with morphological details in *Icones Pleurothallidinarum XI* (Monogr. Syst. Bot. Missouri Bot. Gard. 52: 1-50, 1994. It is elevated here to generic status because of the long-repemt, branching habit; petals often longer than broad; and a variable lip without an appendix (except for a midlobe in *Brachycladium stalagtites*). The lip of *Lepanthes* is lobed with the middle lobe evolved into myriad variations, presumably to attract pollinators.

Brachycladium ariasianum (Luer & L.Jost.) Luer, comb. nov.
Bas.: *Lepanthes ariasiana* Luer & L.Jost, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 104, 1998.
Brachycladium cardiochilum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes cardiochila* Luer & R.Escobar, Orquideología 19(2): 86, 1994.
Brachycladium catellum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes catella* Luer & R.Escobar, Orquideología 16: 10, 1983.
Brachycladium chilopse (Luer & Hirtz) Luer, comb. nov.
Bas.: *Lepanthes chilopsis* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 88, 2002.
Brachycladium ciliare (Luer & Hirtz) Luer, comb. nov.
Bas.: *Lepanthes ciliaris* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 8, 1994.
Brachycladium compositum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes composita* Luer & R.Escobar, Orquideología 91(2): 88, 1994.
Brachycladium cordilabium (Luer) Luer, comb. nov.
Bas.: *Lepanthes cordilabia* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 88, 2002.
Brachycladium dactylum (Garay) Luer, comb. nov.
Bas.: *Lepanthes dactyla* Garay, Orquideología 6: 13, 1971.
Brachycladium destitutum (Luer & R.Escobar) Luer, comb, nov.
Bas.: *Lepanthes destituta* Luer & R.Escobar, Orquideología 17: 179, 1988.
Brachycladium erepse (Luer & Hirtz) Luer, comb. nov.
Bas.: *Lepanthes erepsis* Luer & Hirtz, Die Orchidee 37: 215, 1986.
Brachycladium exigerum (Luer & L.Jost) Luer, comb. nov.
Bas.: *Lepanthes exigua* Luer & Jost, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 89, 2002.
Brachycladium geminipetalum (Luer & J.J.Portilla) Luer, comb. nov.
Bas.: *Lepanthes geminipetala* Luer & Portilla, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 89, 2002.
Brachycladium hippocrepicum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes hippocrepica* Luer & R.Escobar, Orquideología 18: 54, 1991.
Brachycladium irrasum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes irrasa* Luer & R.Escobar, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 18, 1994.
Brachycladium lunare (Luer) Luer, comb. nov.
Bas.: *Lepanthes lunaris* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 21, 1994.
Brachycladium lupulum (Luer & Hirtz) Luer, comb. nov.
Bas.: *Lepanthes lupula* Luer & Hirtz, Amer. Orchid Soc. Bull. 53: 1162, 1984.
Brachycladium lynnianum (Luer) Luer, comb. nov.
Bas. *Lepanthes lynniana* Luer. Monogr. Syst. Bot. Missouri Bot. Gard. 88: 91, 2002.
Brachycladium micropetalum (L.O.Williams) Luer, comb. nov.
Bas.: *Lepanthes micropetala* L.O.Williams., Bot. Mus. Leafl. 9: 4, 1940.
Brachycladium monilium (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes monilia* Luer & R.Escobar, Orquideología 16: 12, 1983.
Brachycladium nummularium (Rchb.f.) Luer, comb. nov.
Bas.: *Lepanthes nummularia* Rchb.f., Xenia Orchid. 1: 142, 1858.
Brachycladium octocornutum (Luer) Luer, comb. nov.
Bas.: *Lepanthes octocornuta* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 91, 2002.
Brachycladium pendens (Garay) Luer, comb. nov.
Bas.: *Lepanthes pendens* Garay, Canad. J. Bot. 34: 252, 1956.
Brachycladium persimile (Luer & Sijm) Luer, comb. nov.
Bas.: *Lepanthes persimilis* Luer & Sijm, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 92, 2002.
Brachycladium pholeter (Luer) Luer, comb. nov.
Bas.: *Lepanthes pholeter* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 33, 1994.
Brachycladium pilosellum (Rchb.f.) Luer, comb. nov.
Bas.: *Lepanthes pilosella* Rchb.f., Flora 69: 556, 1886.

Brachycladium platysepalum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes platysepala* Luer & Escobar, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 36, 1994.
Brachycladium pseudocaulescens (L.B.Sm. & Harris) Luer, comb. nov.
Bas.: *Lepanthes pseudocaulescens* L.B.Sm. & Harris, Bot. Mus. Leafl. 2: 33, 1934.
Brachycladium ricii (Luer & R.Vásquez) Luer, comb. nov.
Bas.: *Lepanthes ricii* Luer & R.Vásquez, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 40, 1994.
Brachycladium stalactites (Luer & Hirtz) Luer, comb. nov.
Bas.: *Lepanthes stalactites* Luer & Hirtz, Lindleyana 2: 105, 1987.
Brachycladium triangulare (Luer) Luer, comb. nov.
Bas.: *Lepanthes triangularis* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 43, 1994.
Brachycladium tridactylum (Luer) Luer, comb. nov.
Bas.: *Lepanthes tridactyla* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 92, 2002.
Brachycladium ursulum (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthes ursula* Luer & R.Escobar, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 46, 1994.
Brachycladium viebrockianum (Luer & L.Jost) comb. nov.
Bas.: *Lepanthes viebrockiana* Luer & L.Jost, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 104, 1998.
Brachycladium villosum (Løjtnant) Luer, comb. nov.
Bas.: *Lepanthes villosa* Løjtnant, Bot. Notiser. 130, 1977.
Brachycladium werneri (Luer) Luer, comb. nov.
Bas.: *Lepanthes werneri* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 93, 2002.

Expedicula Luer, gen. nov.
Type: *Pleurothallis apoda* Garay & Dunsterville, Venez. Orch. Ill. 3: 246, 1965.
Caules lepanthiformes, inflorescentia uniflora, petalis integris acutis, et columna aptera apoda.

This genus of two species is characterized by small plants with ramicauls clad in lepanthiform sheaths; a single-flowered inflorescence; entire, acute petals; and a short, terete, wingless, and footless column with an apical anther and stigma.

This combination of features is not accommodated in any other pleurothallid genus. Because of the lepanthiform sheaths of the ramicauls, association with *Trichosalpinx* Luer and later, with *Lepanthopsis* Ames was considered.

Expedicula apoda (Garay & Dunst.) Luer, comb. nov.
Bas.: *Pleurothallis apoda* Garay & Dunst., Venez. Orch. Ill. 3: 246, 1965.
Syn.: *Trichosalpinx apoda* (Garay & Dunst.) Luer.
Syn.: *Lepanthopsis apoda* (Garay & Dunst.) Luer.
Type: VENEZUELA: **Trujillo**: Feb. 1961, *G.C.K. Dunsterville 506* (Holotype: AMES).

Expedicula dewildei (Luer & R.Escobar) Luer, comb. nov.
Bas.: *Lepanthopsis dewildei* Luer & R.Escobar, Monogr. Syst. Bot. Missouri Bot. Gard. 52: 116, 1994.
Type: COLOMBIA: **Boyacá**: Jan. 1993, *A. De Wilde 4436* (Holotype: MO).

Orbis Luer, gen. nov.
Type: *Pleurothallis truncata* Lindl., Comp. Bot. Mag. 2: 355, 1836.
Syn.: *Pleurothallis* subgen. *Pleurothallis* sect. *Truncatae* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 72: 3, 1995, a subgenus with one species.
Flores labellumque parvi sphaerici, columna teres anthera stigmateque apicales.

This genus of a single species is characterized by a large plant with a sessile leaf; a terminal raceme; suborbicular flowers with a deeply inflated synsepal; a suborbicular lip; and a terete, wingless, and footless column with an apical anther and stigma. Because of the small aperture of the orange flower, as well as the small aperture of the spherical lip, the flowers are probably pollinated by a hummingbird.

This combination of features is not accommodated in any other pleurothallid genus.

Orbis truncata (Lindl.) Luer, comb. nov.
Bas.: *Pleurothallis truncata* Lindl., Comp. Bot. Mag. 2: 355, 1836.
Type: ECUADOR: Andes of Quito, ca. 1848, *W. Jameson s.n.* (Holotype: K).

Specklinia tubata (Lodd.) Luer, comb. nov.
Bas.: *Stelis tubata* Lodd., Bot. Cab. 17, t. 1601, 1830.
Syn.: *Physosiphon tubata* (Lodd.) Rchb.f.
Syn.: *Pleurothalls tubata* (Lodd.) Luer.
Type: MEXICO: **Vera Cruz**: Jalapa, collected 1828, *Mr. Deppe s.n.* (Holotype: W).

This species with deeply connate sepals has been treated in both *Stelis* and *Pleurothallis* R.Br., with which it is incompatible, because of the elongated, winged column.

Vestigium Luer, gen. nov.

Type: *Pleurothallis abortiva* Luer, Phytologia 47: 72, 1980.

Syn.: *Pleurothallis* subgen. *Pleurothallis* sect. *Abortivae* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 20: 57, 1986,

Labellum vestigium, columna teres anthera stigmateque apicales.

Type: COLOMBIA: *Nariño*: La Planada above Ricaurte, 1979, *C. Luer et al. 4547* (Holotype: SEL).

As defined in 1986, section *Abortivae* contained seven species, five of which have been transferred to *Acronia* Presl; one, to *Ancipitia* (Luer) Luer; and this lone species, to *Vestigium*.

This genus of a single species is characterized by a small plant with a sessile leaf; a single-flowered inflorescence; attenuated petals; a minute, membranous lip beneath a terete column with the anther and stigma apical. This combination of features is not accommodated in any other pleurothallid genus.

Vestigium abortivum (Luer) Luer, comb. nov.

Bas.: *Pleurothallis abortiva* Luer, Phytologia 47: 72, 1980.

Type: COLOMBIA: **Nariño**: La Planada, Ricaurte, 2 Nov. 1979, *C. Luer et al. 4547* (Holotype: SEL).

CORRIGENDA

Monogr. Syst. Bot. Missouri Bot. Gard. 95, 2004.

Because of an earlier homonym, the following new name is required:

Brachionidium pepe-portillae Luer & Hirtz, nom. nov.

for *Brachionidium portillae* Luer & Hirtz, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 233, 2004; not *Brachionidium portillae* Luer, Lindleyana 1: 176, 1986.

Because of the omission of the place of publication of the basionym, the following is required:

Crocodeilanthe weddelliana (Rchb.f.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 257, 2004.

Bas.: *Pleurothallis weddelliana* Rchb.f., Xenia Orchidaceae 3: 24, 1878.

Because of the omission of the word "Holotype," the following were invalid under Art. 37.5 (2000 ICBN):

Lepanthes inaequisepala Luer & J.J. Portilla, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 90, 2002.

Ecuador: Morona-Santiago: Sinai near Macas, cultivated at Ecuagenera, Oct. 2000, *J. Portilla 2114* (Holotype: MO).

Lepanthes politilabia Dod ex Luer, Selbyana 24(1): 22, 2003.

Haiti: collected near Rio Glace, cultivated as H-2 at the Jardín Botánico Nacional, Santo Domingo, Dom. Rep., *D. Dod 2216* (Holotype: MO).

Lepanthopsis purpurata Dod ex Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 104, 2002.

Haiti: Massif de la Hotte, Les Cayes, Formond, alt. 1100 m, collected by D. Dod, cultivated at the Jardín Botánico Nacional, Santo Domingo, Dom. Rep., Apr. 1992, *D. Dod 2260* (Holotype: MO).

Lepanthopsis woodsiana Dod ex Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 105, 2002.

Haiti: Massif de la Hotte, Les Cayes, Formond, alt. 1100 m, collected by D. Dod, cultivated at the Jardín Botánico Nacional, Santo Domingo, Dom. Rep., Apr. 1992, *D. Dod 2263* (Holotype: MO).

Masdevallia tricycla Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 87: 971. 2002.

Ecuador: Zamora-Chinchipe: Podocarpus, cultivated at Ecuagenera, Dec. 2001, *A. Hirtz 7837* (Holotype: MO).

VALIDATION OF NAMES CITED IN MONOGR. SYST. BOT. MISSOURI BOT. GARD. 95, 2004.

Icones Pleurothallidinarum XXVI was planned for the fall of 2003, but delays postponed it until the spring of 2004, when it was published simultaneously with the next *Icones Pleurothallidinarum*.

Aberrantia Luer, gen. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 76, 2004.

This generic name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 253, 2004 with an alternative name, *Pleurothallis* subgen. *Aberrantia*, l.c.: 76, 2004. I here validate only the name *Aberrantia* Luer. The leaf decurrent on the ramicaul, reminiscent of *Acianthera* Scheidw.; the lobulate, callous petals; and the long-unguiculate lip with a lobulate blade are not accommodated in any pleurothallid genus.

Aberrantia aberrans (Luer) Luer, comb. nov.

Bas. *Pleurothallis aberrans* Luer, Selbyana 2: 382, 1978.

Type: PANAMA: **Veraguas**: above Santa Fe, 1976, *C. Luer & R. Dressler 1628* (Holotype: SEL).

This combination was invalidly published under Art. 43.1 (2000 ICBN) by being attributed to an invalidly published genus.

Didactylus Luer, gen. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 77, 2004.

This generic name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 257, 2004 with an alternative name *Pleurothallis* subgen. *Didactylus*, l.c.: 77, 2004. I here validate only the name *Didacrylus* Luer. A sessile leaf and terminal raceme, reminiscent of *Acianthera* Schweidw.; and a semiterete column with ventral anther, bibrachiate rostellum, and ventral stigma distinguish this genus.

Didactylus butcheri (L.O.Williams) Luer, comb. nov.

Bas. *Pleurothallis butcheri* L.O.Williams, Fieldiana Bot. 29: 346, 1961.

Type.: PANAMA: **Chiriquí**: vicinity of Volcán, 1961, *H.P. Butcher 651* (Holotype: F).

This combination was invalidly published under Art. 43.1 (2000 ICBN) by being attributed to an invalidly published genus.

Didactylus oscitans (Ames) Luer, comb. nov.

Bas. *Pleurothallis oscitans* Ames, Bot. Mus. Leafl. 2: 25, 1934.

Type: HONDURAS: **Cortes**: Santa Cruz de Yojoa, 1933, *J.B. Edwards 515* (Holotype: AMES).

This combination was invalidly published under Art. 43.1 (2000 ICBN) by being attributed to an invalidly published genus.

Didactylus paradoxa (Luer & Dalström) Luer, comb. nov.

Bas. *Pleurothallis paradoxa* Luer & Dalström, Lindleyana 11: 177, 1996.

Type: ECUADOR: **Imbabura**: Los Cedros Reserve, 1993, *S. Dalström et al. 1764* (Holotype: MO).

This combination was invalidly published under Art. 43.1 (2000 ICBN) by being attributed to an invalidly published genus.

Didactylus thysana (Luer & J.J.Portilla) Luer, comb. nov.

Bas. *Pleurothallis thysana* Luer & J.J.Portilla, Rev. Soc. Bol. Bot. 3: 62, 2001.

Type: ECUADOR: **Morona-Santiago**: Cutucú, near Sinai, 1999, cultivated by Ecuagenera, 2000, *J.J. Portilla s.n.* (Holotype: MO).

This combination was invalidly published under Art. 34.1 (2000 ICBN) by being attributed to an invalidly published genus.

Unguella Luer, gen. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 80, 2004.

This generic name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 265, 2004 with an alternative name, *Pleurothallis* subgen. *Unguella*, l.c.: 80: 2004. I here validate only the name *Unguella* Luer. A sessile leaf and terminal raceme, reminiscent of *Acianthera* Schweidw.; a long-unguiculate lip articulated to the tip of an elongated column-foot; and a semiterete, winged column with ventral anther and stigma distinguish this genus.

Unguella cachensis (Ames) Luer, comb. nov.

Bas.: *Pleurothallis cachensis* Ames, Sched. Orchid. 4: 17, 1923.

Type: COSTA RICA: **Cartago**: near Cachi, 1919, *C.H. Lankester 76* (Holotype: K).

This combination was invalidly published under Art. 43.1 (2000 ICBN) by being attributed to an invalidly published genus.

Unguella lepidota (L.O.Williams) Luer, comb. nov.

Bas.: *Pleurothallis lepidota* L.O.Williams, Ann. Missouri Bot. Gard. 27: 279, 1940.

Type: PANAMA: **Chiriquí**: Llanos del Volcán, 1939, *P.H. Allen 1552* (Holotype: AMES).

This combination was invalidly published under Art. 43.1 (2000 ICBN) by being attributed to an invalidly published genus.

Acianthera martinezii Luer, sp. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 46, 2004.

This species name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 254, 2004 with an alternative name *Pleurothallis martinezii* in l.c.: 46, 2004. I here validate only the second *martinezii* Luer.

Acianthera venulosa Luer, sp. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 70, 2004.

This species name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 254, 2004 with an alternative name *Pleurothallis venulosa* in l.c.: 70, 2004. I here validate only the second *venulosa* Luer.

Crocodeilanthe erectiflora Luer, sp. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 236, 2004.

This species name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 256, 2004 with an alternative name *Pleurothallis erectiflora* in l.c.: 236, 2004. I here validate only the second *erectiflora* Luer.

Specklinia feuilletii Luer, sp. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 237, 2004.

This species name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 260, 2004 with an alternative name *Pleurothallis feuilletii* in l.c.: 237, 2004. I here validate only the second *feuilletii* Luer.

Specklinia ximenae Luer, sp. nov.

Type and diagnosis as cited in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 238, 2004.

This species name was invalidly published under Art. 34.2 (2000 ICBN) by being simultaneously published in Monogr. Syst. Bot. Missouri Bot. Gard. 95: 265, 2004 with an alternative name *Pleurothallis ximenae* in l.c.: 238, 2004. I here validate only the second *ximenae* Luer.

ERRATA

Monogr. Syst. Bot. Missouri Bot. Gard. 95, 2004.

Because of erroneous listing, delete:
Apoda-Prorepentia karlii (Pabst) Luer, page 255.
Specklinia erosa (Garay) Luer, page 260.
Specklinia medinae (J.J. Portilla) Luer, page 262.
Specklinia smaragdina (Luer) Luer, page 264.
Specklinia ximenae (Luer & Hirtz) Luer, page 265.
Specklinia yauaperyensis (Barb.Rodr.) Luer, page 265.

Because of oversight or typographical errors, the following should read:
Acianthera aculeata (Luer & Hirtz) Luer, page 253.
Bas.: *Pleurothallis jimii* Luer, page 254.
Bas.: *Pleurothallis maxima* Luer, page 256.
Specklinia funerea (Barb.Rodr.) Luer, page 260.
Specklinia thomasiae (Luer) Luer, page 264.
Specklinia unduavica (Luer & Vásquez) Luer, page 264.

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